

# GESTION DE LA VIRTUALIZACION CON VAGRANT



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Sistemas Operativos en Red

## 1. Instalación de Git en Windows:

He instalado **Git** mediante interfaz gráfica, descargando Git desde la página del creador.

## 2. Instalación de Ubuntu en Windows:

Para instalar Ubuntu en Windows, primero he tenido que activar **Hyper-V** y **WSL 2.0**, después de reiniciar he descargado **Ubuntu 20.04** desde la Microsoft Store, posteriormente lo he configurado y al arrancar WSL desde Powershell, ya puedo utilizar la shell de Ubuntu en Windows.

## 3. Instalación para Windows y para Ubuntu de:

### a. VirtualBox:

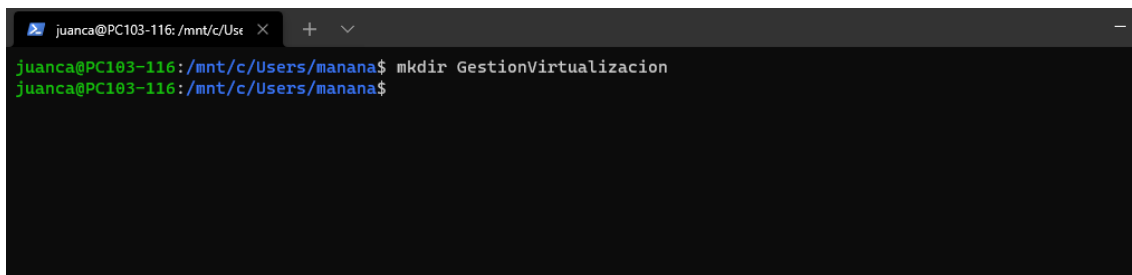
- i. **Windows:** La Instalación de VirtualBox en Windows es muy simple, te vas a la página del fabricante y te descargas el ejecutable, lo instalas y listo.
- ii. **Ubuntu:** Primero de todo hay que actualizar la lista de repositorios con **"apt update"** siempre con derechos de administrador, si no pones **"sudo"** delante. Una vez los repositorios actualizados, escribes **"apt-get install virtualbox"** y se nos empezará a instalar VirtualBox en Ubuntu.

## b. Vagrant:

- i. **Windows:** el proceso es similar al de VirtualBox, únicamente hay que descargarse el ejecutable desde la página del desarrollador e instalarlo.
- ii. **Ubuntu:** este es más complejo. Lo primero de todo es instalar Curl, Curl es una herramienta para transferir datos hacia o desde un servidor. Se instala con "**apt install curl**". Una vez instalado Curl, vamos a descargar el paquete de Vagrant desde su repositorio Web poniendo: "**curl -fsSL https://apt.releases.hashicorp.com/gpg | sudo apt-key add -**". Una vez descargado, añadimos el repositorio "**sudo apt-add-repository "deb [arch=amd64] https://apt.releases.hashicorp.com \$(lsb\_release -cs) main"**" procedemos a instalarlo con: "**sudo apt-get update && sudo apt-get install vagrant**" y ya debería de estar instalado.

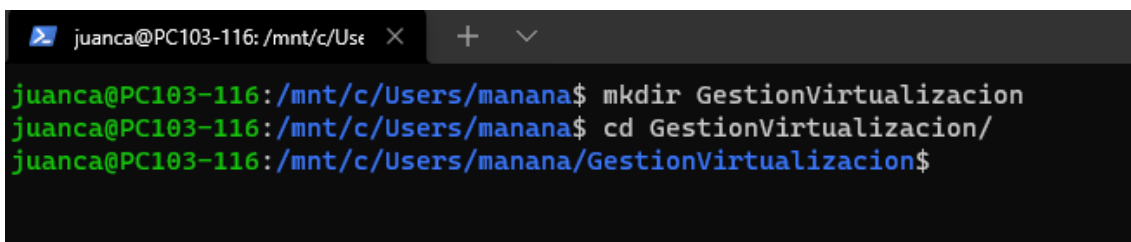
## 4. Desde PowerShell:

- a. Crear una carpeta dentro de tu usuario con el nombre de GestionVirtualizacion



```
juanca@PC103-116: /mnt/c/Users/manana$ mkdir GestionVirtualizacion
juanca@PC103-116: /mnt/c/Users/manana$
```

- b. Accede a ella



```
juanca@PC103-116: /mnt/c/Users/manana$ mkdir GestionVirtualizacion
juanca@PC103-116: /mnt/c/Users/manana$ cd GestionVirtualizacion/
juanca@PC103-116: /mnt/c/Users/manana/GestionVirtualizacion$
```

### c. Ejecuta los comandos de vagrant para

#### i. Ver la versión de vagrant

```
juanca@PC103-116: /mnt/c/Usr x + v
juanca@PC103-116: /mnt/c/Users/manana/GestionVirtualizacion$ vagrant --version
Vagrant 2.2.18
juanca@PC103-116: /mnt/c/Users/manana/GestionVirtualizacion$ |
```

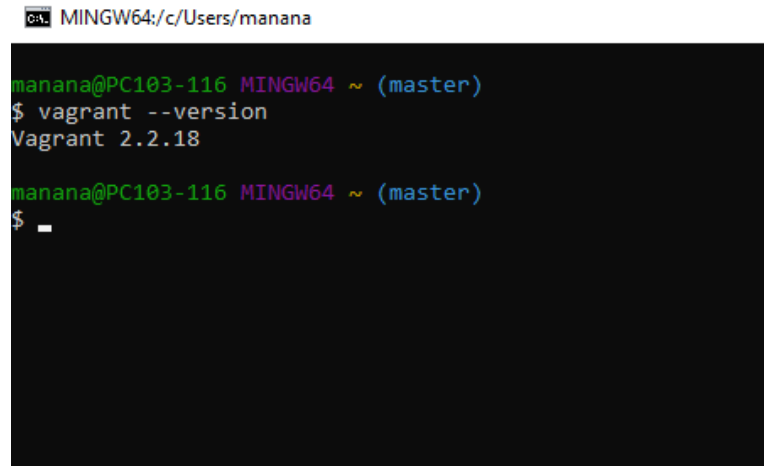
#### ii. Mostrar conjunto de comandos de vagrant

```
manana [master] - PowerShell 5 x + v
C:\Users\manana [master +26 -0 -0 i]> vagrant --help
Usage: vagrant [options] <command> [<args>]

-h, --help                Print this help.

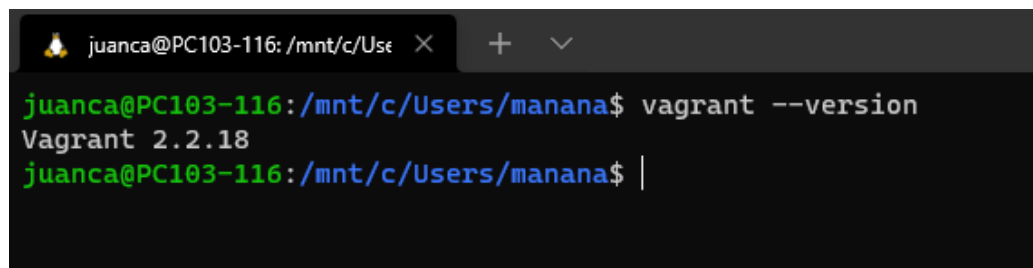
Common commands:
autocomplete             manages autocomplete installation on host
box                      manages boxes: installation, removal, etc.
cloud                   manages everything related to Vagrant Cloud
destroy                 stops and deletes all traces of the vagrant machine
global-status           outputs status Vagrant environments for this user
halt                    stops the vagrant machine
help                    shows the help for a subcommand
init                    initializes a new Vagrant environment by creating a Vagrantfile
login
package                 packages a running vagrant environment into a box
plugin                  manages plugins: install, uninstall, update, etc.
port                    displays information about guest port mappings
powershell              connects to machine via powershell remoting
provision                provisions the vagrant machine
push                    deploys code in this environment to a configured destination
rdp                     connects to machine via RDP
reload                  restarts vagrant machine, loads new Vagrantfile configuration
resume                  resume a suspended vagrant machine
snapshot                manages snapshots: saving, restoring, etc.
ssh                     connects to machine via SSH
ssh-config              outputs OpenSSH valid configuration to connect to the machine
status                  outputs status of the vagrant machine
suspend                 suspends the machine
up                      starts and provisions the vagrant environment
```

## 5. Desde Git bash comprobar que puedo acceder a vagrant ejecutando un comando cualquiera.



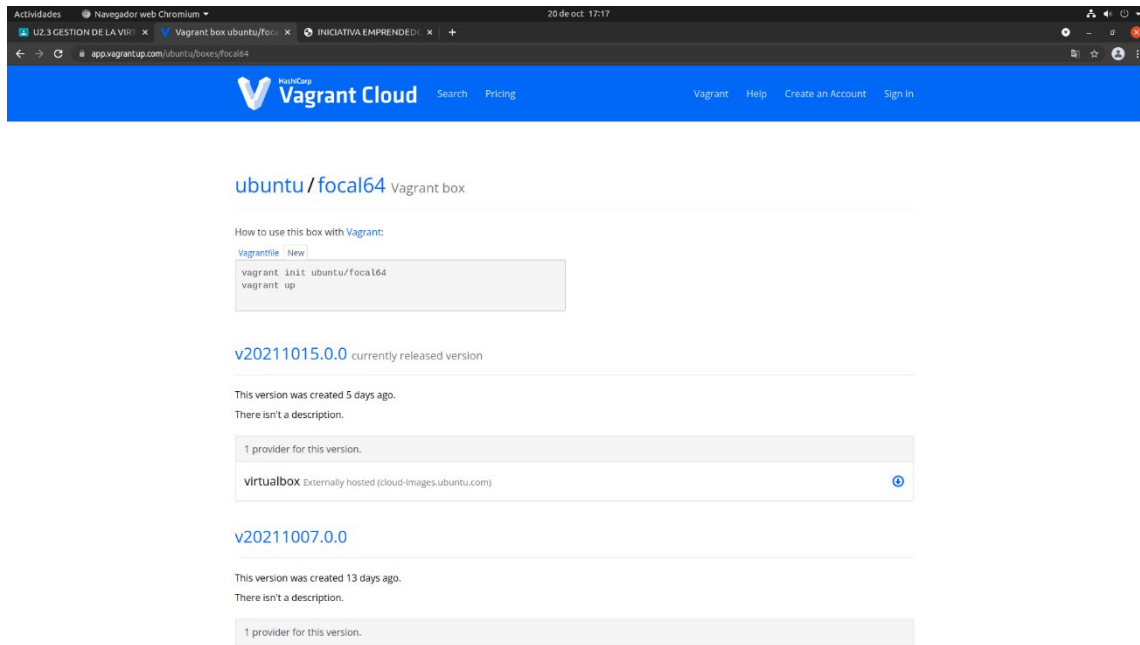
```
MINGW64:/c/Users/manana  
manana@PC103-116 MINGW64 ~ (master)  
$ vagrant --version  
Vagrant 2.2.18  
manana@PC103-116 MINGW64 ~ (master)  
$
```

## 6. Lo mismo desde Ubuntu en Windows:

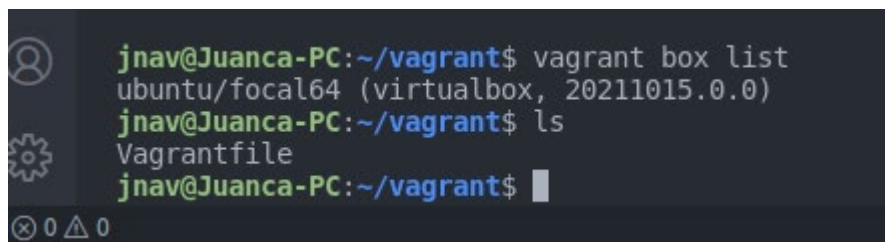


```
juanca@PC103-116: /mnt/c/Use  
juanca@PC103-116:/mnt/c/Users/manana$ vagrant --version  
Vagrant 2.2.18  
juanca@PC103-116:/mnt/c/Users/manana$ |
```

## 7. Desde la página de vagrant, busca algunas boxes y añádelas al sistema.



## 8. Listas las boxes que tienes



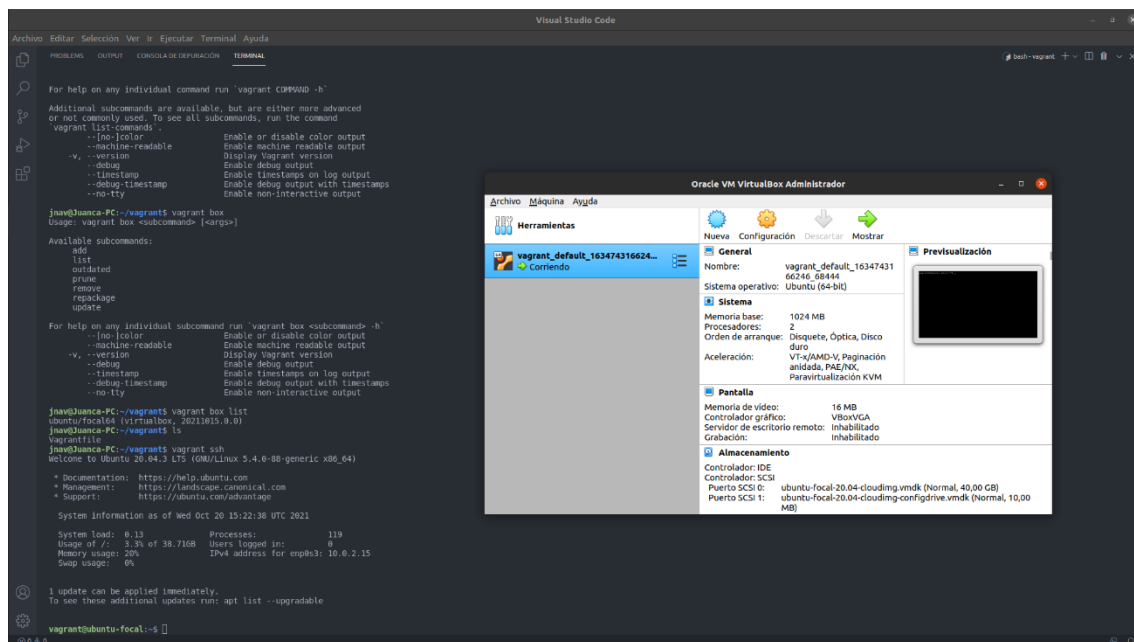
## 9. Verificar las boxes descargadas mirando el directorio donde se almacenan las boxes

```
jnav@Juanca-PC:~/vagrant$ ls
Vagrantfile
jnav@Juanca-PC:~/vagrant$
```

## 10. Verificad:

Tendremos dos escenarios compatibles.

Si accedemos a virtual box veríamos las maquinas.



## 11. Directorio Compartido:

1. Accede a la maquina;
2. Comprueba que puedes ver el fichero vagrant en /vagrant desde la máquina virtual
3. Crea un fichero de texto en /vagrant
4. Sal de la maquina
5. Verifica desde el fichero sincronizado de la maquina anfitrión que puedes ver y modificar los ficheros anteriores.

```
jnav@Juanca-PC:~/vagrant$ vagrant ssh
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.4.0-88-generic x86_64)

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

System information as of Wed Oct 20 15:25:04 UTC 2021

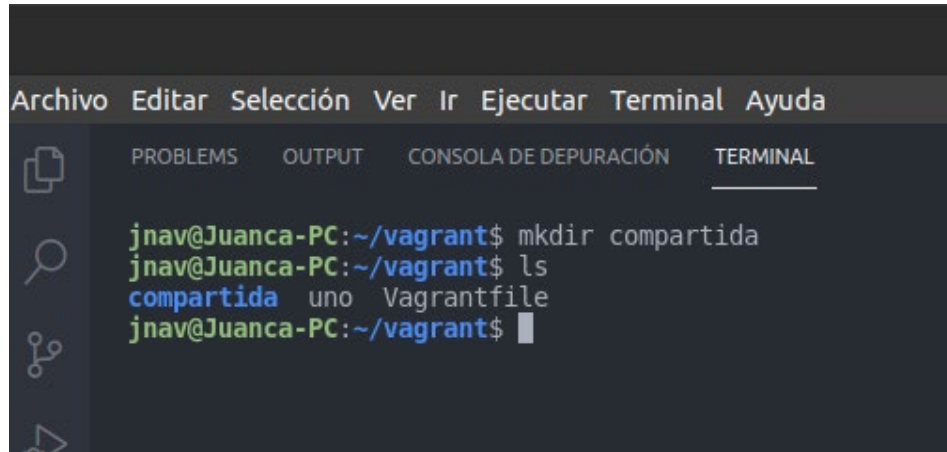
System load:  0.01               Processes:            111
Usage of /:   3.3% of 38.71GB    Users logged in:     1
Memory usage: 20%               IPv4 address for enp0s3: 10.0.2.15
Swap usage:   0%

1 update can be applied immediately.
To see these additional updates run: apt list --upgradable

Last login: Wed Oct 20 15:23:05 2021
vagrant@ubuntu-focal:~$ ls
vagrant@ubuntu-focal:~$ cd /vagrant
vagrant@ubuntu-focal:~/vagrant$ nano uno
vagrant@ubuntu-focal:~/vagrant$ exit
logout
Connection to 127.0.0.1 closed.
jnav@Juanca-PC:~/vagrant$ ls
uno  Vagrantfile
jnav@Juanca-PC:~/vagrant$
```

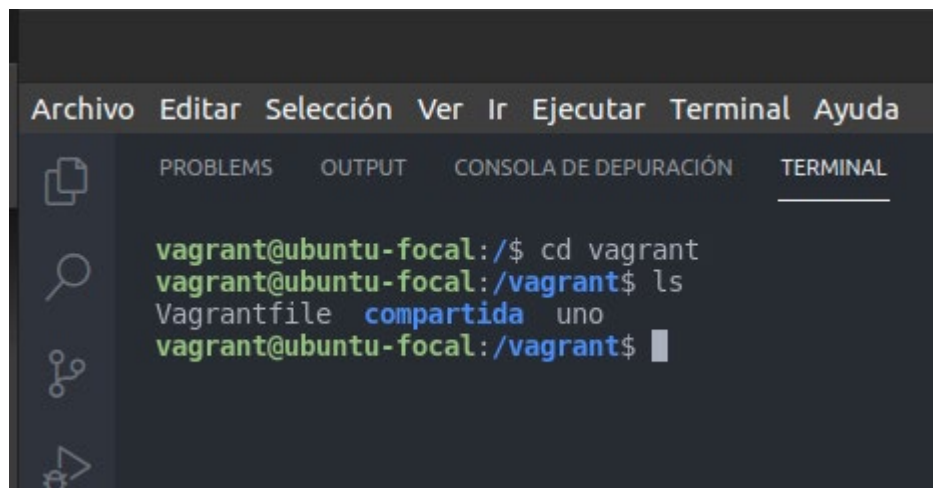


6. crea una carpeta llamada compartida dentro de nuestro anfitrión (Windows) y verifica que se puede acceder desde la máquina virtual.



```
Archivo  Editar  Selección  Ver  Ir  Ejecutar  Terminal  Ayuda
PROBLEMS  OUTPUT  CONSOLA DE DEPURACIÓN  TERMINAL

jnav@Juanca-PC:~/vagrant$ mkdir compartida
jnav@Juanca-PC:~/vagrant$ ls
compartida  uno  Vagrantfile
jnav@Juanca-PC:~/vagrant$
```



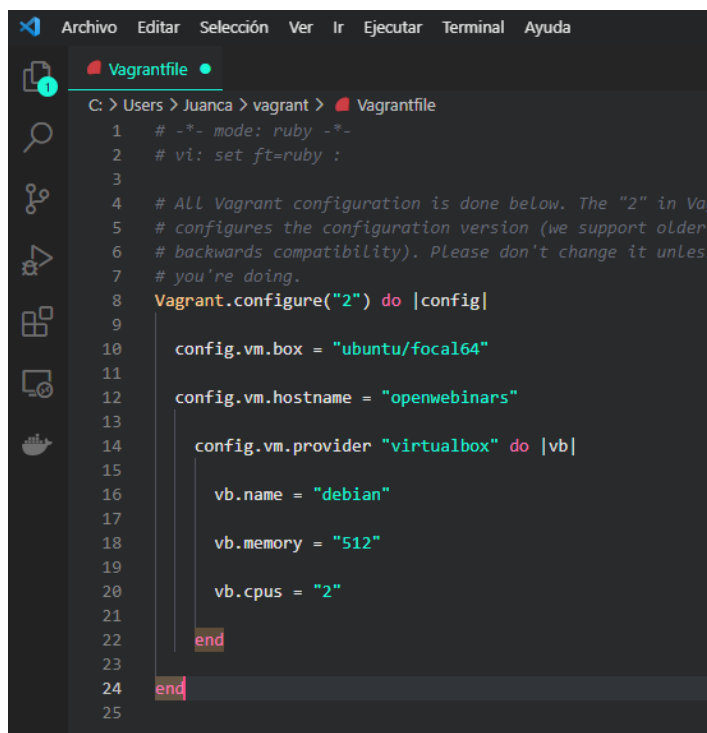
```
Archivo  Editar  Selección  Ver  Ir  Ejecutar  Terminal  Ayuda
PROBLEMS  OUTPUT  CONSOLA DE DEPURACIÓN  TERMINAL

vagrant@ubuntu-focal:/$ cd vagrant
vagrant@ubuntu-focal:/vagrant$ ls
Vagrantfile  compartida  uno
vagrant@ubuntu-focal:/vagrant$
```

## 12. MODIFICACION HARDWARE MAQUINA VIRTUAL:

1. Crea un nuevo proyecto llamado pl para recrear la configuración de la maquina descrita anteriormente:

- Debian/jessie64
- Hostname: openwebinars
- Proveedor virtualbox:
- Nombre: debian
- Memoria 512
- 2 cpus

A screenshot of a code editor showing a Vagrantfile. The editor has a menu bar with 'Archivo', 'Editar', 'Selección', 'Ver', 'Ir', 'Ejecutar', 'Terminal', and 'Ayuda'. The file is named 'Vagrantfile' and is located at 'C:\> Users > Juanca > vagrant > Vagrantfile'. The code is as follows:

```
1  # -*- mode: ruby -*-
2  # vi: set ft=ruby :
3
4  # All Vagrant configuration is done below. The "2" in Vag
5  # configures the configuration version (we support older
6  # backwards compatibility). Please don't change it unless
7  # you're doing.
8  Vagrant.configure("2") do |config|
9
10     config.vm.box = "ubuntu/focal64"
11
12     config.vm.hostname = "openwebinars"
13
14     config.vm.provider "virtualbox" do |vb|
15
16         vb.name = "debian"
17
18         vb.memory = "512"
19
20         vb.cpus = "2"
21
22     end
23
24 end
```

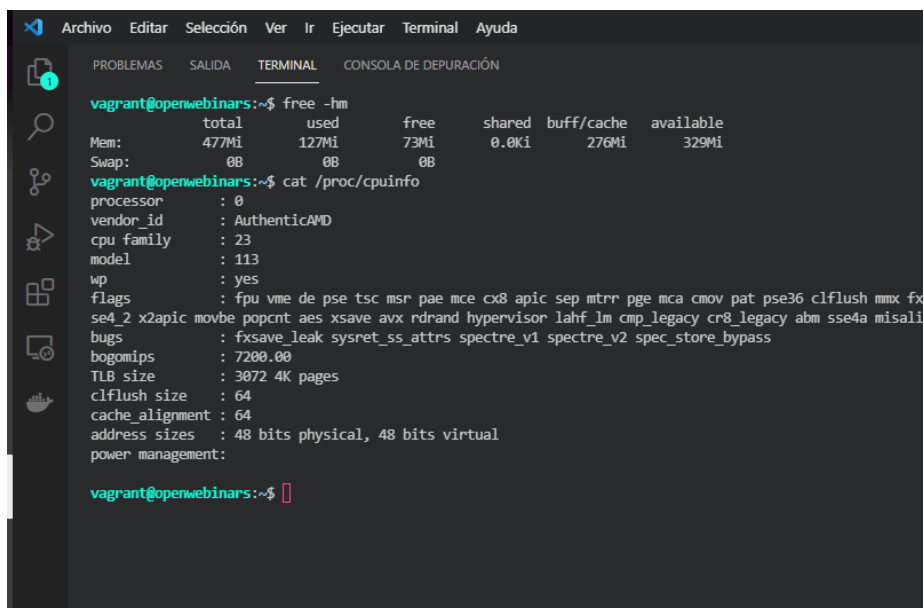
## 2. Verifico las características de la maquina:

### 1. Abriendo virtualbox

### 2. Entrando en la máquina virtual (vagrant ssh)

#### i. Free -hm

#### ii. Cat /proc/cpuinfo

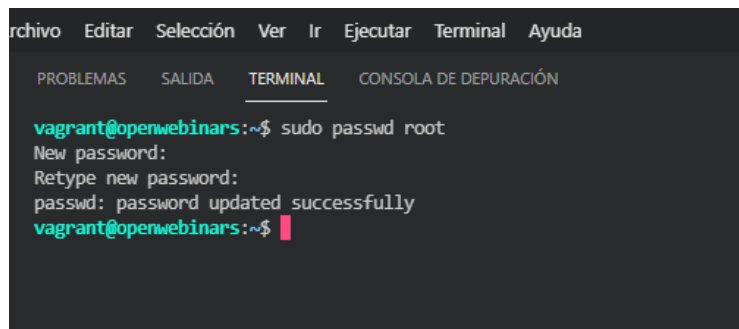


```
vagrant@openwebinars:~$ free -hm
              total        used        free      shared  buff/cache   available
Mem:           477Mi       127Mi        73Mi         0.0Ki       276Mi       329Mi
Swap:           0B           0B           0B

vagrant@openwebinars:~$ cat /proc/cpuinfo
processor       : 0
vendor_id      : AuthenticAMD
cpu family     : 23
model          : 113
wp             : yes
flags          : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fx
se4_2 x2apic movbe popcnt aes xsave avx rdrand hypervisor lahf_lm cmp_legacy cr8_legacy abm sse4a misali
bugs           : fxsave_leak sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
bogomips       : 7200.00
TLB size       : 3072 4K pages
clflush size   : 64
cache_alignme  : 64
address sizes   : 48 bits physical, 48 bits virtual
power managem  :
```

## 3. Activa el usuario root

### 1. Sudo passwd root

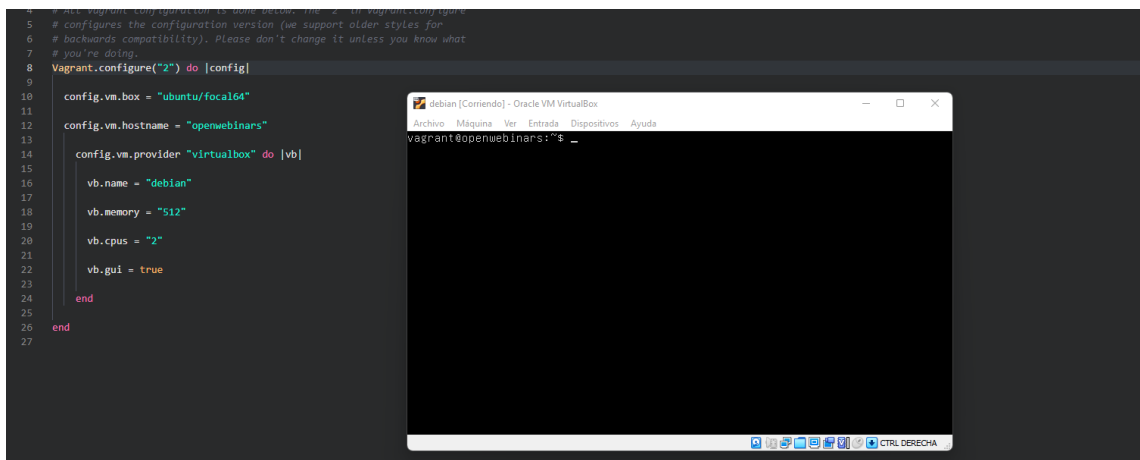


```
vagrant@openwebinars:~$ sudo passwd root
New password:
Retype new password:
passwd: password updated successfully
vagrant@openwebinars:~$
```

## 4. Destruye la maquina (destroy)

```
PS C:\Users\Juanca\vagrant> vagrant destroy
default: Are you sure you want to destroy the 'default' VM? [y/N] y
==> default: Destroying VM and associated drives...
PS C:\Users\Juanca\vagrant>
```

## 5. Créala de nuevo, pero con interfaz grafica



## 13. Redes privadas:

### 1. Crea un nuevo Proyecto p3redes

#### a. Ubuntu/trusty64

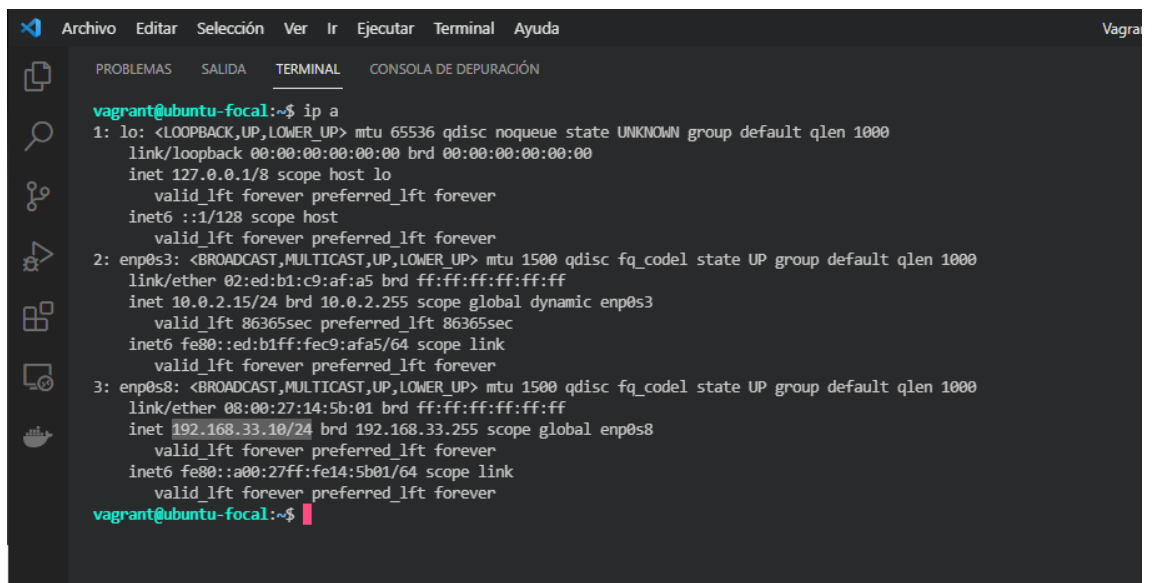
#### b. Añade una red privada en 192.168.33.10

```
Vagrant.configure("2") do |config|

  config.vm.box = "ubuntu/focal64"

  config.vm.network "private_network", ip: "192.168.33.10"

end
```



```
Archivo Editar Selección Ver Ir Ejecutar Terminal Ayuda
PROBLEMAS SALIDA TERMINAL CONSOLA DE DEPURACIÓN

vagrant@ubuntu-focal:~$ ip a
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: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 02:ed:b1:c9:af:a5 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic enp0s3
        valid_lft 86365sec preferred_lft 86365sec
    inet6 fe80::ed:b1ff:fec9:afa5/64 scope link
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:14:5b:01 brd ff:ff:ff:ff:ff:ff
    inet 192.168.33.10/24 brd 192.168.33.255 scope global enp0s8
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe14:5b01/64 scope link
        valid_lft forever preferred_lft forever
vagrant@ubuntu-focal:~$
```

### c. Levanta la maquina

### d. Accede mediante las dos interfaces

```
PS C:\Users\Juanca\vagrant> vagrant ssh
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.4.0-89-generic x86_64)

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

System information as of Sun Oct 24 12:26:25 UTC 2021

System load:  0.05          Processes:           118
Usage of /:   3.3% of 38.71GB Users logged in:        0
Memory usage: 19%          IPv4 address for enp0s3: 10.0.2.15
Swap usage:   0%           IPv4 address for enp0s8: 192.168.33.10

1 update can be applied immediately.
To see these additional updates run: apt list --upgradable

Last login: Sun Oct 24 12:24:14 2021 from 192.168.33.1
vagrant@ubuntu-focal:~$
```

```
PS C:\Users\Juanca\vagrant> ssh -i .vagrant/machines/default/virtualbox/private_key vagrant@192.168.33.10
The authenticity of host '192.168.33.10 (192.168.33.10)' can't be established.
ECDSA key fingerprint is SHA256:fgJjhyZb52YUDxSbxF1o4btX8ijF3E0qYheZGAVILPk.
Are you sure you want to continue connecting (yes/no/[fingerprint])? y
Please type 'yes', 'no' or the fingerprint: yes
Warning: Permanently added '192.168.33.10' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.4.0-89-generic x86_64)

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

System information as of Sun Oct 24 12:24:14 UTC 2021

System load:  0.46          Processes:           118
Usage of /:   3.3% of 38.71GB Users logged in:        0
Memory usage: 19%          IPv4 address for enp0s3: 10.0.2.15
Swap usage:   0%           IPv4 address for enp0s8: 192.168.33.10

1 update can be applied immediately.
To see these additional updates run: apt list --upgradable

Last login: Sun Oct 24 12:23:08 2021 from 10.0.2.2
vagrant@ubuntu-focal:~$
```

## 14. Redes públicas:

1. Modifica el proyecto anterior para que utilice una red publica

```
8  Vagrant.configure("2") do |config|
9
10  config.vm.box = "ubuntu/focal64"
11
12  config.vm.network "public_network"
13
14  end
15
```

2. Levantamos la maquina vagrant up

3. Me conecto vagrant ssh

4. Veo el direccionamiento ip

```
vagrant@ubuntu-focal:~$ ip a
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: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 02:ed:b1:c9:af:a5 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic enp0s3
        valid_lft 86346sec preferred_lft 86346sec
    inet6 fe80::ed:b1ff:fec9:afa5/64 scope link
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:14:5b:01 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.40/24 brd 192.168.1.255 scope global dynamic enp0s8
        valid_lft 86349sec preferred_lft 86349sec
    inet6 fe80::a00:27ff:fe14:5b01/64 scope link
        valid_lft forever preferred_lft forever
vagrant@ubuntu-focal:~$
```

## 15. Servidor Web:

1. Modifica el fichero vagrant de la maquina debian para que se pueda acceder a un servidor web en la máquina virtual(guest) en el puerto 80 sabiendo que el puerto que se utiliza en la maquina anfitriona es el 8080

```

4  # All Vagrant configuration is done below. The "2" in Vagrant.configure
5  # configures the configuration version (we support older styles for
6  # backwards compatibility). Please don't change it unless you know what
7  # you're doing.
8  Vagrant.configure("2") do |config|
9
10     config.vm.box = "ubuntu/focal64"
11
12     # Disable automatic box update checking. If you disable this, then
13     # boxes will only be checked for updates when the user runs
14     # 'vagrant box outdated'. This is not recommended.
15     # config.vm.box_check_update = false
16
17     # Create a forwarded port mapping which allows access to a specific port
18     # within the machine from a port on the host machine. In the example below,
19     # accessing "localhost:8080" will access port 80 on the guest machine.
20     # NOTE: This will enable public access to the opened port
21     config.vm.network "forwarded_port", guest: 80, host: 8080
22
23     # Create a forwarded port mapping which allows access to a specific port
24     # within the machine from a port on the host machine and only allow access
25     # via 127.0.0.1 to disable public access
26     # config.vm.network "forwarded_port", guest: 80, host: 8080, host_ip: "127.0.0.1"
27
28     # Create a private network, which allows host-only access to the machine
29     # using a specific IP

```

2. Levanta la maquina
3. Vagrant up
4. Vagrant ssh
5. Actualizamos e Instalamos el servicio de apache

```

vagrant@ubuntu-focal:~$ sudo apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libjansson4 liblua5.2-0 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser openssl-blacklist
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libjansson4 liblua5.2-0 ssl-cert
0 upgraded, 11 newly installed, 0 to remove and 6 not upgraded.
Need to get 1866 kB of archives.
After this operation, 8088 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu focal/main amd64 libapr1 amd64 1.6.5-1ubuntu1 [91.4 kB]
Get:2 http://archive.ubuntu.com/ubuntu focal/main amd64 libaprutil1 amd64 1.6.1-4ubuntu2 [84.7 kB]
Get:3 http://archive.ubuntu.com/ubuntu focal/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-4ubuntu2 [10.5 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal/main amd64 libaprutil1-ldap amd64 1.6.1-4ubuntu2 [8736 B]
Get:5 http://archive.ubuntu.com/ubuntu focal/main amd64 libjansson4 amd64 2.12-1build1 [28.9 kB]
Get:6 http://archive.ubuntu.com/ubuntu focal/main amd64 liblua5.2-0 amd64 5.2.4-1.1build3 [106 kB]
Get:7 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 apache2-bin amd64 2.4.41-4ubuntu3.7 [1180 kB]
Get:8 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 apache2-data all 2.4.41-4ubuntu3.7 [159 kB]
Get:9 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 apache2-utils amd64 2.4.41-4ubuntu3.7 [84.4 kB]
Get:10 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 apache2 amd64 2.4.41-4ubuntu3.7 [95.6 kB]
Get:11 http://archive.ubuntu.com/ubuntu focal/main amd64 ssl-cert all 1.0.39 [17.0 kB]
Fetched 1866 kB in 1s (2594 kB/s)
Preconfiguring packages ...
Selecting previously unselected package libapr1:amd64.

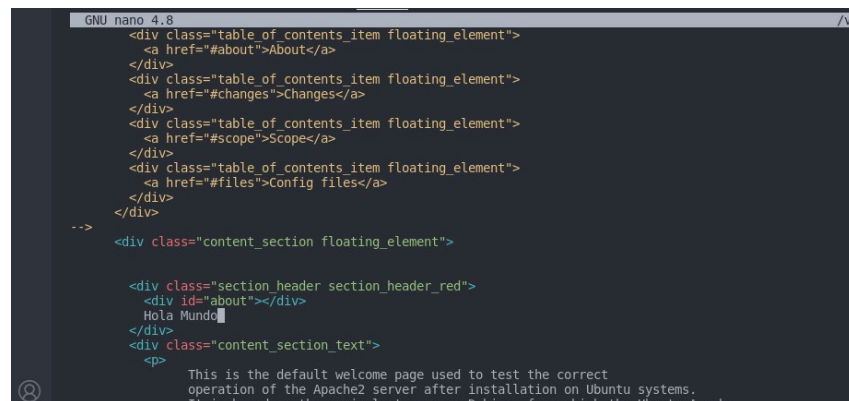
```



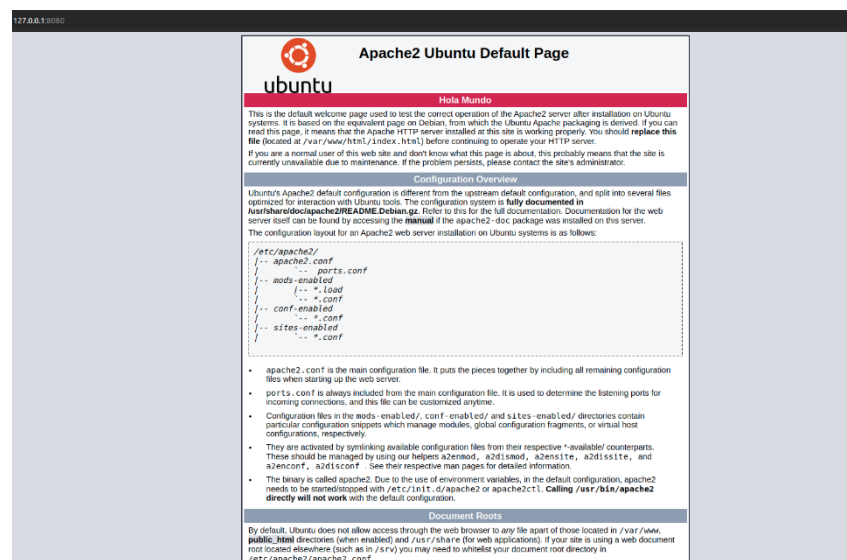
## 6. Abrimos el navegador



## 7. Accedemos al archivo index.html para cambiarlo y que aparezco hola mundo



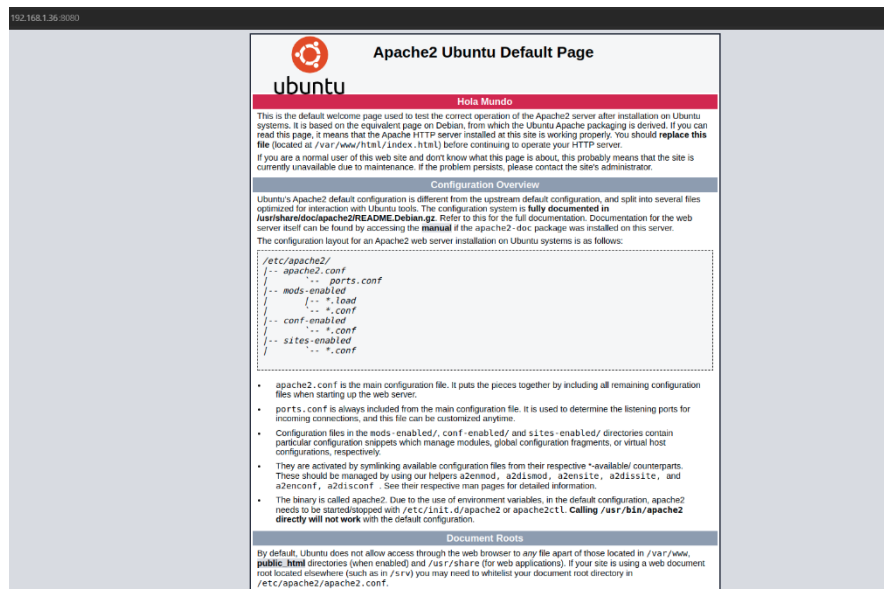
## 8. Vuelvo a acceder al navegador para ver la modificación



## 9. Salgo de la máquina para ver la ip de mi red y Compruebo en la maquina está dentro de mi red local. Miro la ip de la maquina

```
vagrant@ubuntu-focal:~$ ip a
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: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 02:1c:3b:73:7d:88 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic enp0s3
        valid lft 86119sec preferred_lft 86119sec
    inet6 fe80::1c:3bff:fe73:7d88/64 scope link
        valid lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:b1:86:3d brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.36/24 brd 192.168.1.255 scope global dynamic enp0s8
        valid lft 86121sec preferred_lft 86121sec
    inet6 fe80::a00:27ff:feb1:863d/64 scope link
        valid lft forever preferred_lft forever
vagrant@ubuntu-focal:~$
```

## 10. Accedo a internet desde esa ip



## 11. Vagrant port

```
jnav@Juanca-PC:~/vagrant$ vagrant port
The forwarded ports for the machine are listed below. Please note that
these values may differ from values configured in the Vagrantfile if the
provider supports automatic port collision detection and resolution.

    22 (guest) => 2222 (host)
    80 (guest) => 8080 (host)
jnav@Juanca-PC:~/vagrant$
```

# 16. Multientornos:

## 1. Configurar el Vagrantfile:

```

4 # All Vagrant configuration is done below. The "2" in Vagrant.configure
5 # configures the configuration version (we support older styles for
6 # backwards compatibility). Please don't change it unless you know what
7 # you're doing.
8 Vagrant.configure("2") do |config|
9
10   config.vm.define "maquina1" do |m1|
11
12     m1.vm.box = "ubuntu/focal64"
13
14   end
15
16   config.vm.define "maquina2" do |m2|
17
18     m2.vm.box = "debian/jessie64"
19
20   end
21
22   # Disable automatic box update checking. If you disable this, then
23   # boxes will only be checked for updates when the user runs
24   # `vagrant box outdated`. This is not recommended.
25   # config.vm.box_check_update = false

```

## 2. Vagrant reload

## 3. Vagrant up

## 4. Inicia las máquinas en terminales diferentes:

## 5. Haz un ping entre ellas:

```

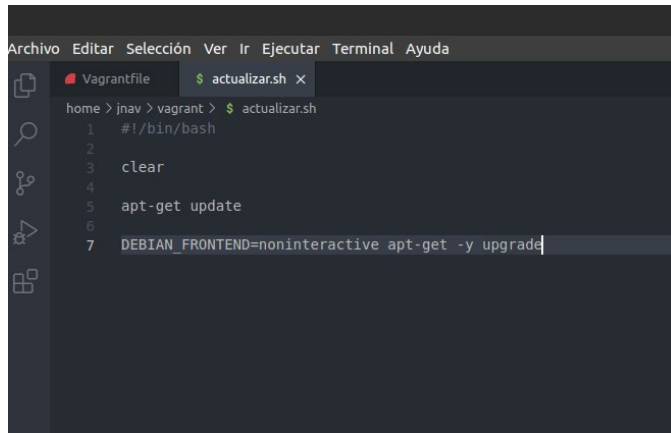
vagrant@ubuntu-focal:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
   link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
   inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
   inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
   link/ether 02:1c:3b:73:7d:88 brd ff:ff:ff:ff:ff:ff
   inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic enp0s3
       valid_lft 86271sec preferred_lft 86271sec
   inet6 fe80::1c:3b:73:7d:88/64 scope link
       valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
   link/ether 08:00:27:0c:e8:34 brd ff:ff:ff:ff:ff:ff
   inet 192.168.1.37/24 brd 192.168.1.255 scope global dynamic enp0s8
       valid_lft 86273sec preferred_lft 86273sec
   inet6 fe80::a00:27ff:fe0c:e834/64 scope link
       valid_lft forever preferred_lft forever
vagrant@ubuntu-focal:~$ ping 192.168.1.39
PING 192.168.1.39 (192.168.1.39) 56(84) bytes of data.
64 bytes from 192.168.1.39: icmp_seq=1 ttl=64 time=0.308 ms
64 bytes from 192.168.1.39: icmp_seq=2 ttl=64 time=0.320 ms
64 bytes from 192.168.1.39: icmp_seq=3 ttl=64 time=0.226 ms
64 bytes from 192.168.1.39: icmp_seq=4 ttl=64 time=0.313 ms
^C
--- 192.168.1.39 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3090ms
rtt min/avg/max/mdev = 0.226/0.291/0.320/0.038 ms
vagrant@ubuntu-focal:~$

vagrant@jessie:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
   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: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
   link/ether 08:00:27:8d:c0:4d brd ff:ff:ff:ff:ff:ff
   inet 10.0.2.15/24 brd 10.0.2.255 scope global eth0
       valid_lft forever preferred_lft forever
   inet6 fe80::a00:27ff:fe8d:c04d/64 scope link
       valid_lft forever preferred_lft forever
3: eth1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
   link/ether 08:00:27:bd:36:81 brd ff:ff:ff:ff:ff:ff
   inet 192.168.1.39/24 brd 192.168.1.255 scope global eth1
       valid_lft forever preferred_lft forever
   inet6 fe80::a00:27ff:febd:3681/64 scope link
       valid_lft forever preferred_lft forever
vagrant@jessie:~$ ping 192.168.1.37
PING 192.168.1.37 (192.168.1.37) 56(84) bytes of data.
64 bytes from 192.168.1.37: icmp_seq=1 ttl=64 time=0.472 ms
64 bytes from 192.168.1.37: icmp_seq=2 ttl=64 time=0.475 ms
64 bytes from 192.168.1.37: icmp_seq=3 ttl=64 time=0.680 ms
64 bytes from 192.168.1.37: icmp_seq=4 ttl=64 time=0.314 ms
64 bytes from 192.168.1.37: icmp_seq=5 ttl=64 time=0.332 ms
^C
--- 192.168.1.37 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4030ms
rtt min/avg/max/mdev = 0.314/0.454/0.680/0.133 ms

```

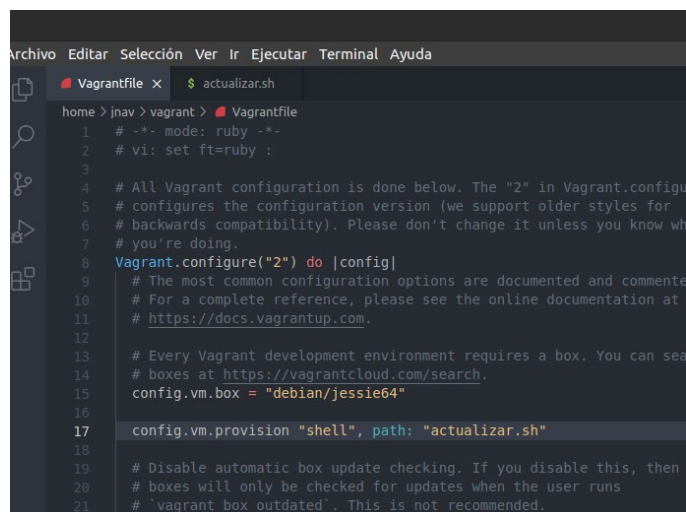
## 17. Actualización automática con script:

### 1. Creamos un script .sh llamado actualizar.sh:



```
home > jnav > vagrant > $ actualizar.sh
1  #!/bin/bash
2
3  clear
4
5  apt-get update
6
7  DEBIAN_FRONTEND=noninteractive apt-get -y upgrade
```

### 2. Actualizamos el Vagrantfile:



```
home > jnav > vagrant > $ Vagrantfile
1  # -*- mode: ruby -*-
2  # vi: set ft=ruby :
3
4  # All Vagrant configuration is done below. The "2" in Vagrant.configure
5  # configures the configuration version (we support older styles for
6  # backwards compatibility). Please don't change it unless you know what
7  # you're doing.
8  Vagrant.configure("2") do |config|
9    # The most common configuration options are documented and commented
10   # For a complete reference, please see the online documentation at
11   # https://docs.vagrantup.com.
12
13   # Every Vagrant development environment requires a box. You can see
14   # boxes at https://vagrantcloud.com/search.
15   config.vm.box = "debian/jessie64"
16
17   config.vm.provision "shell", path: "actualizar.sh"
18
19   # Disable automatic box update checking. If you disable this, then
20   # boxes will only be checked for updates when the user runs
21   # 'vagrant box outdated'. This is not recommended.
```

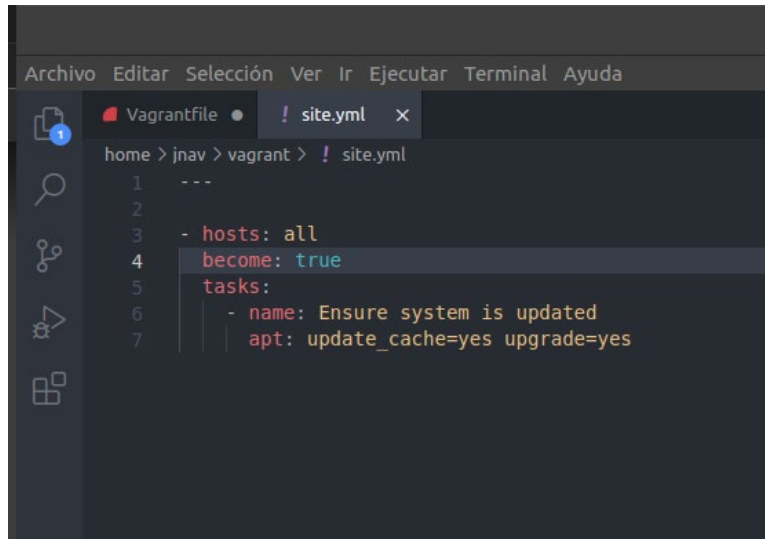
### 3. Levantamos la máquina

### 4. Hacemos un vagrant provision:

```
jnav@Juanca-PC:~/vagrant$ vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Checking if box 'ubuntu/focal64' version '20211015.0.0' is up to date...
==> default: Machine already provisioned. Run 'vagrant provision' or use the '--provision'
==> default: flag to force provisioning. Provisioners marked to run always will still run.
jnav@Juanca-PC:~/vagrant$ vagrant provision
==> default: Running provisioner: shell...
default: Running: /tmp/vagrant-shell20211022-32857-akpvc.sh
default: Hit:1 http://archive.ubuntu.com/ubuntu focal InRelease
default: Hit:2 http://archive.ubuntu.com/ubuntu focal-updates InRelease
default: Hit:3 http://security.ubuntu.com/ubuntu focal-security InRelease
default: Hit:4 http://archive.ubuntu.com/ubuntu focal-backports InRelease
default: Reading package lists...
default: Reading package lists...
default: Building dependency tree...
default: Reading state information...
default: Calculating upgrade...
default: The following packages have been kept back:
default:   linux-headers-generic linux-headers-virtual linux-image-virtual
default:   linux-virtual
default: The following packages will be upgraded:
default:   alsa-ucm-conf open-vm-tools
default: 2 upgraded, 0 newly installed, 0 to remove and 4 not upgraded.
default: Need to get 675 kB of archives.
default: After this operation, 950 kB of additional disk space will be used.
default: Get:1 http://archive.ubuntu.com/ubuntu focal-updates/universe amd64 open-vm-tools amd64 2:11.3.0-2ubuntu0-ubuntu20.04.1 [648 kB]
default: Get:2 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 alsa-ucm-conf all 1.2.2-1ubuntu0.11 [26.9 kB]
default: Fetched 675 kB in 1s (1130 kB/s)
default: Fetching 63936 files and directories currently installed.
default: Preparing to unpack .../open-vm-tools_2%3a11.3.0-2ubuntu0-ubuntu20.04.1_amd64.deb ...
```

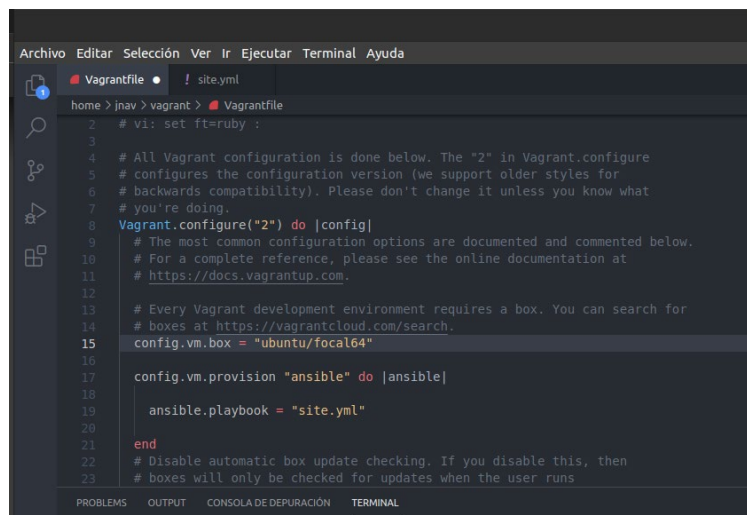
## 18. Actualización automática con Ansible:

### 1. Creamos un script en Yamal:



```
Archivo Editar Selección Ver Ir Ejecutar Terminal Ayuda
Vagrantfile site.yml x
home > jnav > vagrant > ! site.yml
1 ---
2
3 - hosts: all
4   become: true
5   tasks:
6     - name: Ensure system is updated
7       apt: update_cache=yes upgrade=yes
```

### 2. Actualizamos el Vagrantfile:



```
Archivo Editar Selección Ver Ir Ejecutar Terminal Ayuda
Vagrantfile site.yml
home > jnav > vagrant > Vagrantfile
2 # vi: set ft=ruby :
3
4 # All Vagrant configuration is done below. The "2" in Vagrant.configure
5 # configures the configuration version (we support older styles for
6 # backwards compatibility). Please don't change it unless you know what
7 # you're doing.
8 Vagrant.configure("2") do |config|
9   # The most common configuration options are documented and commented below.
10  # For a complete reference, please see the online documentation at
11  # https://docs.vagrantup.com.
12
13  # Every Vagrant development environment requires a box. You can search for
14  # boxes at https://vagrantcloud.com/search.
15  config.vm.box = "ubuntu/focal64"
16
17  config.vm.provision "ansible" do |ansible|
18    ansible.playbook = "site.yml"
19  end
20
21  # Disable automatic box update checking. If you disable this, then
22  # boxes will only be checked for updates when the user runs
23  # vagrant box --rebase --all
```

### 3. Levantamos la máquina

### 4. Hacemos un vagrant provision:

```
PROBLEMS  OUTPUT  CONFIGURATION  TERMINAL
jnav@Juanca-PC:~/vagrant$ vagrant provision
==> default: Running provisioner: ansible...
default: Running ansible-playbook...

PLAY [all] *****

TASK [Gathering Facts] *****
ok: [default]

TASK [Ensure system is updated] *****
ok: [default]

PLAY RECAP *****
default                : ok=2    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

jnav@Juanca-PC:~/vagrant$
```