

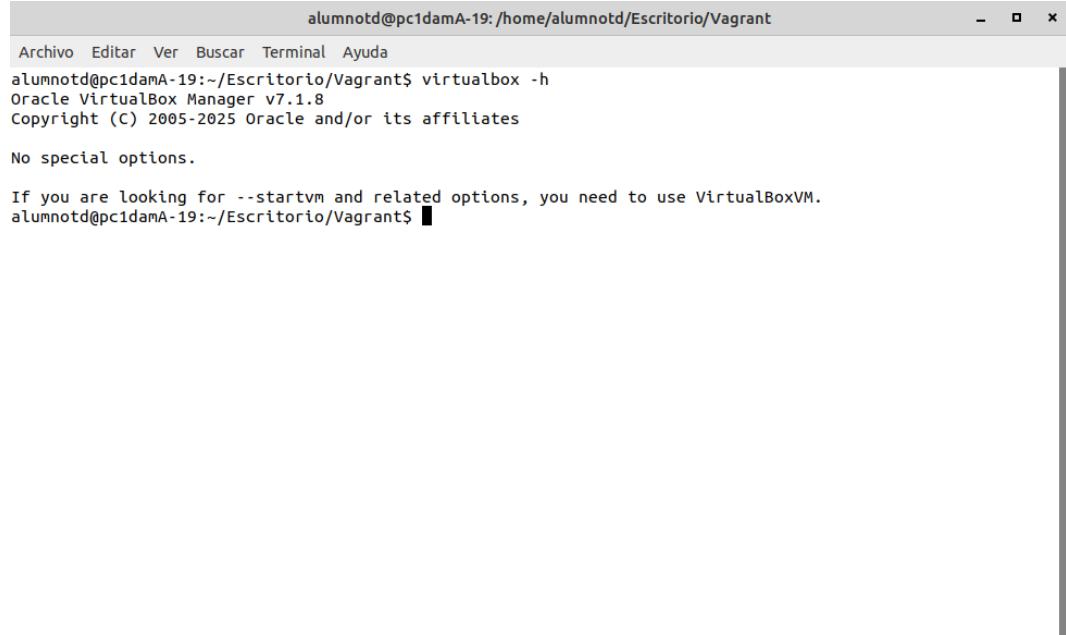
# Práctica Vagrant

---

## Parte 1 – Preparación del entorno

1. Comprueba que tienes instalados:

- VirtualBox.

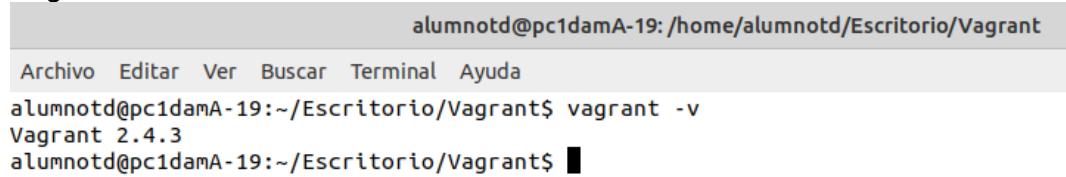


```
alumnod@pc1damA-19:/home/alumnod/Escritorio/Vagrant
Archivo Editar Ver Buscar Terminal Ayuda
alumnod@pc1damA-19:~/Escritorio/Vagrant$ virtualbox -h
Oracle VirtualBox Manager v7.1.8
Copyright (C) 2005-2025 Oracle and/or its affiliates

No special options.

If you are looking for --startvm and related options, you need to use VirtualBoxVM.
alumnod@pc1damA-19:~/Escritorio/Vagrant$
```

- Vagrant.



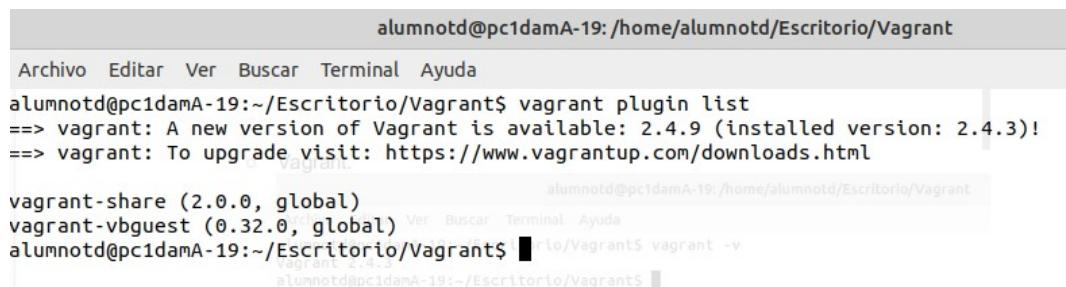
```
alumnod@pc1damA-19:/home/alumnod/Escritorio/Vagrant
Archivo Editar Ver Buscar Terminal Ayuda
alumnod@pc1damA-19:~/Escritorio/Vagrant$ vagrant -v
Vagrant 2.4.3
alumnod@pc1damA-19:~/Escritorio/Vagrant$
```

2. Ejecuta los siguientes comandos y explica brevemente qué hace cada uno:

- `vagrant -h`

`vagrant -h` nos ayuda haciendo print de los comandos que las opciones que puedo usar

- `vagrant plugin list`



```
alumnod@pc1damA-19:/home/alumnod/Escritorio/Vagrant
Archivo Editar Ver Buscar Terminal Ayuda
alumnod@pc1damA-19:~/Escritorio/Vagrant$ vagrant plugin list
==> vagrant: A new version of Vagrant is available: 2.4.9 (installed version: 2.4.3)!
==> Vagrant: To upgrade visit: https://www.vagrantup.com/downloads.html
vagrant-share (2.0.0, global)
vagrant-vbguest (0.32.0, global) Ver Buscar Terminal Ayuda
alumnod@pc1damA-19:~/Escritorio/Vagrant$ vagrant -v
Vagrant 2.4.3
alumnod@pc1damA-19:~/Escritorio/Vagrant$
```

nos da una lista de los plugins instalados que tiene

---

## Parte 2 – Primera máquina virtual

4. Crea una carpeta llamada **Vagrant\_Practica**.

```
alumnod@pc1damA-19:~/Escritorio/Vagrant$ mkdir Vagrant_Practica
alumnod@pc1damA-19:~/Escritorio/Vagrant$ ls -l V*
total 0
alumnod@pc1damA-19:~/Escritorio/Vagrant$ ls -l
total 4
drwxr-x--- 2 alumnod alumnod 4096 feb  3 13:48 Vagrant_Practica
alumnod@pc1damA-19:~/Escritorio/Vagrant$ █
```

5. Inicializa Vagrant usando una box de **Ubuntu Server**.

```
Vagrant init ubuntu/trusty64
alumnod@pc1damA-19:~/Escritorio/Vagrant/Vagrant_Practica$ vagrant init ubuntu/trusty64
A `Vagrantfile` has been placed in this directory. You are now $ ls -l V*
ready to `vagrant up` your first virtual environment! Please read
the comments in the Vagrantfile as well as documentation on vagrantup.com for more information on using Vagrant.
alumnod@pc1damA-19:~/Escritorio/Vagrant/Vagrant_Practica$ vagrant up 12:48 Vagrant_Practica
Bringing machine 'default' up with 'virtualbox' provider...[Vagrant]
==> default: Importing base box 'ubuntu/trusty64'...
==> default: Matching MAC address for NAT networking...
==> default: Checking if box 'ubuntu/trusty64' version '20191107.0.0' is up to date...
==> default: Setting the name of the VM: Vagrant_Practica_default_1770123215542_56605
==> default: Clearing any previously set forwarded ports...
==> default: Clearing any previously set network interfaces...
==> default: Preparing network interfaces based on configuration...
    default: Adapter 1: nat [Proveedor]
    default: Forwarding ports...
        default: 22 (guest) => 2222 (host) (adapter 1)
==> default: Booting VM... [Versión del sistema operativo]
==> default: Waiting for machine to boot. This may take a few minutes...
    default: SSH address: 127.0.0.1:2222 [Conectado por SSH]
    default: SSH username: vagrant
    default: SSH auth method: private key
    default: 
    default: Vagrant insecure key detected. Vagrant will automatically replace
    default: it during the next Vagrant up. If you want to replace it manually, remove
    default: .vagrant.d/insecure_private_key from your Vagrant directory. [Vagrant]
```

6. Analiza el **Vagrantfile** generado e indica:

- Box utilizada.

```
==> default: Clearing any previously set network interfaces...
==> default: Preparing network interfaces based on configuration...
# Every Vagrant development environment requires a box. You can search for
# boxes at https://vagrantcloud.com/search.
config.vm.box = "ubuntu/trusty64"
==> default: Booting VM...
==> default: Waiting for machine to boot. This may take a few minutes...
```

- Proveedor.

```

# Provider-specific configuration so you can fine-tune various
# backing providers for Vagrant. These expose provider-specific options.
# Example for VirtualBox:
#   default: SSH auth method: private key
# config.vm.provider "virtualbox" do |vb|
#   # Display the VirtualBox GUI when booting the machine
#   vb.gui = true
#   # Análisis del Vagrantfile generado e indica:
#   #   o Box utilizada
#   #   # Customize the amount of memory on the VM:
#   #   vb.memory = "1024" Vagrant development environment requires a box. You can search for
#   # end boxes at https://vagrantcloud.com/search.
#   config.vm.box = "ubuntu/trusty64"
#
#   # View the documentation for the provider you are using for more
#   # information on available options.
#   #   o Versión de la configuración
#   #   7. Arranca la máquina virtual
#   # Enable provisioning with a shell script. Additional provisioners such as
#   # Ansible, Chef, Docker, Puppet and Salt are also available. Please see the
#   # documentation for more information about their specific syntax and use.
#   # config.vm.provision "shell", inline: <<-SHELL
#   #   apt-get update
#   #   apt-get install -y apache2
#   # SHELL

```

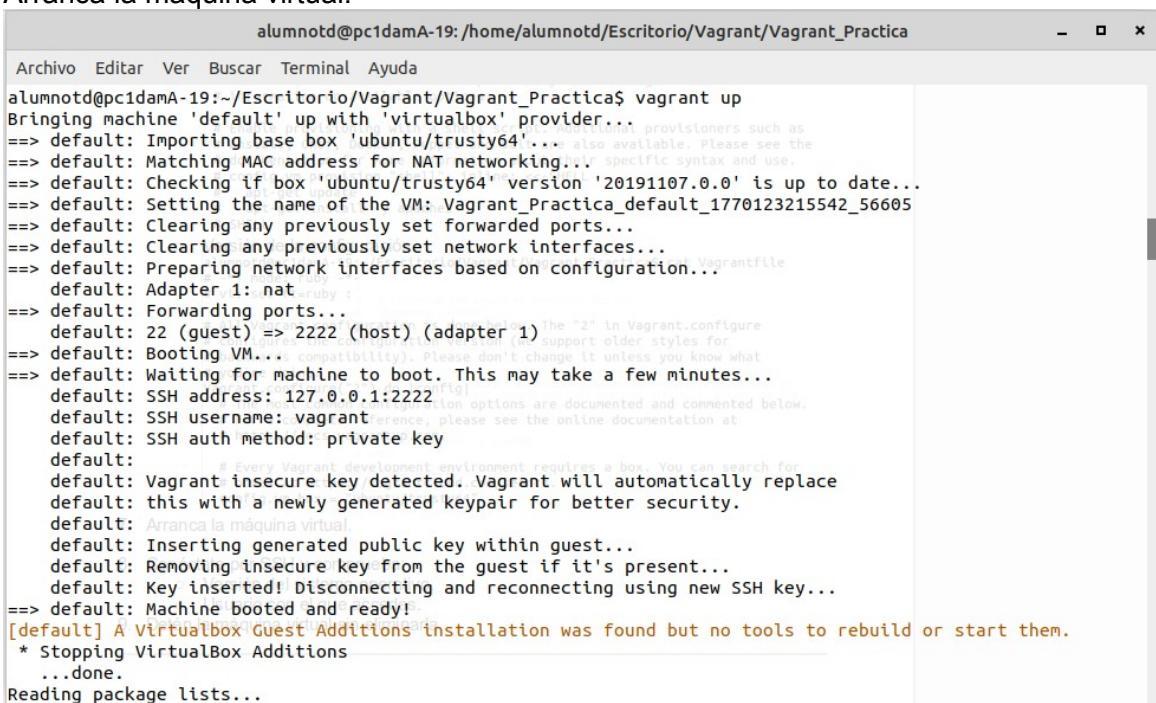
- Versión de la configuración.

```

alumnodt@pc1damA-19:~/Escritorio/Vagrant/Vagrant_Practica$ cat Vagrantfile
# -*- mode: ruby -*-
# vi: set ft=ruby :
# All Vagrant configuration is done below. The "2" in Vagrant.configure
# configures the configuration version (we support older styles for
# backwards compatibility). Please don't change it unless you know what
# you're doing.
Vagrant.configure("2") do |config|
  # The most common configuration options are documented and commented below.
  # For a complete reference, please see the online documentation at
  # https://docs.vagrantup.com.
  # Every Vagrant development environment requires a box. You can search for
  # boxes at https://vagrantcloud.com/search.
  config.vm.box = "ubuntu/trusty64"

```

## 7. Arranca la máquina virtual.



```

alumnodt@pc1damA-19:~/home/alumnodt/Escritorio/Vagrant/Vagrant_Practica - □ ×
Archivo Editar Ver Buscar Terminal Ayuda
alumnodt@pc1damA-19:~/Escritorio/Vagrant/Vagrant_Practica$ vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Importing base box 'ubuntu/trusty64'...
==> default: Matching MAC address for NAT networking...
==> default: Checking if box 'ubuntu/trusty64' version '20191107.0.0' is up to date...
==> default: Setting the name of the VM: Vagrant_Practica_default_1770123215542_56605
==> default: Clearing any previously set forwarded ports...
==> default: Clearing any previously set network interfaces...
==> default: Preparing network interfaces based on configuration...
==> default: Adapter 1: nat
==> default: Forwarding ports...
==> default: 22 (guest) => 2222 (host) (adapter 1)
==> default: Booting VM...
==> default: Waiting for machine to boot. This may take a few minutes...
default: SSH address: 127.0.0.1:2222
default: SSH username: vagrant
default: SSH auth method: private key
default: 
default: Vagrant insecure key detected. Vagrant will automatically replace
default: this with a newly generated keypair for better security.
default: 
default: Inserting generated public key within guest...
default: Removing insecure key from the guest if it's present...
default: Key inserted! Disconnecting and reconnecting using new SSH key...
==> default: Machine booted and ready!
[default] A VirtualBox Guest Additions installation was found but no tools to rebuild or start them.
* Stopping VirtualBox Additions
...done.

Reading package lists...

```

## 8. Conéctate por SSH y comprueba:

```
vagrant@vagrant-ubuntu-trusty-64: ~
Archivo Editar Ver Buscar Terminal Ayuda
alumnodt@pc1damA-19:~/Escritorio/Vagrant/Vagrant_Practica$ vagrant ssh
Welcome to Ubuntu 14.04.6 LTS (GNU/Linux 3.13.0-170-generic x86_64)

 * Documentation: https://help.ubuntu.com/

System information disabled due to load higher than 1.0

UA Infrastructure Extended Security Maintenance (ESM) is not enabled.

0 updates can be installed immediately.
0 of these updates are security updates.

Enable UA Infrastructure ESM to receive 64 additional security updates.
See https://ubuntu.com/advantage or run: sudo ua status

New release '16.04.7 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

-bash: warning: setlocale: LC_ALL: cannot change locale (es_ES.UTF-8)

WARNING! Your environment specifies an invalid locale.
This can affect your user experience significantly, including the
ability to manage packages. You may install the locales by running:

sudo apt-get install language-pack-es
or
sudo locale-gen es_ES.UTF-8
```

- Versión del sistema operativo.

```
vagrant@vagrant-ubuntu-trusty-64: ~
Archivo Editar Ver Buscar Terminal Ayuda
alumnodt@pc1damA-19:~/Escritorio/Vagrant/Vagrant_Practica$ vagrant ssh
Welcome to Ubuntu 14.04.6 LTS (GNU/Linux 3.13.0-170-generic x86_64)

○ Usuario con el que accedes.
vagrant@vagrant-ubuntu-trusty-64:~$ users
vagrant
vagrant@vagrant-ubuntu-trusty-64:~$ who
vagrant pts/0 Feb 3 13:01 (10.0.2.2)
vagrant@vagrant-ubuntu-trusty-64:~$ █
```

## 9. Detén la máquina virtual sin eliminarla.

```
To see all available language packs, run:
apt-cache search "^language-pack-[a-z][a-z]$"
To disable this message for all users, run:
sudo touch /var/lib/cloud/instance/locale-check.skip
-bash: warning: setlocale: LC_ALL: cannot change locale (es_ES.U
-bash: warning: setlocale: LC_ALL: cannot change locale (es_ES.U
vagrant@vagrant-ubuntu-trusty-64:~$ vagrant halt
The program 'vagrant' is currently not installed. To run 'vagrant
the package 'vagrant'
vagrant@vagrant-ubuntu-trusty-64:~$ users
vagrant
vagrant@vagrant-ubuntu-trusty-64:~$ who
vagrant pts/0 Feb 3 13:01 (10.0.2.2)
vagrant@vagrant-ubuntu-trusty-64:~$ 
Broadcast message from vagrant@vagrant-ubuntu-trusty-64
(unknown) at 13:10 ...
The system is going down for halt NOW!
Connection to 127.0.0.1 closed by remote host.
alumnodt@pc1damA-19:~/Escritorio/Vagrant/Vagrant_Practica$ █
```

## Parte 3 – Configuración del Vagrantfile

10. Modifica el **Vagrantfile** para:

- Asignar **1 GB de RAM**.
- Asignar **1 CPU**.

```
config.vm.provider "virtualbox" do |vb|
  vb.memory = "1024"
  vb.cpu = 1
end
```

11. Configura una **red privada (host-only)** con IP fija **192.168.56.20**.

```
config.vm.network "private_network",
  ip: "192.168.56.20",
  netmask: "255.255.248.0"
```

12. Arranca la máquina y comprueba desde el host que la IP responde.

```
alumnodt@pc1damA-19:~/Escritorio/Vagrant/Vagrant_Practica$ vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Checking if box 'ubuntu/trusty64' version '20191107.0.0' is up to date...
==> default: Clearing any previously set forwarded ports...
==> default: Clearing any previously set network interfaces...
==> default: Preparing network interfaces based on configuration...
    default: Adapter 1: nat
    default: Adapter 2: hostonly
==> default: Forwarding ports...
    default: 80 (guest) => 8080 (host) (adapter 1)
    default: 22 (guest) => 2222 (host) (adapter 1)
==> default: Running 'pre-boot' VM customizations...
==> default: Booting VM...
==> default: Waiting for machine to boot. This may take a few minutes...
    default: SSH address: 127.0.0.1:2222
    default: SSH username: vagrant
    default: SSH auth method: private key
==> default: Machine booted and ready!
[default] GuestAdditions 7.1.8 running --- OK.
==> default: Checking for guest additions in VM...
==> default: Configuring and enabling network interfaces...
==> default: Mounting shared folders...
    default: /home/alumnodt/Escritorio/Vagrant/Vagrant_Practica => /vagrant
    default: /home/alumnodt/Escritorio/Vagrant/vagrant/datos => /datos_host
==> default: Machine already provisioned. Run `vagrant provision` or use the `--provision`
==> default: flag to force provisioning. Provisioners marked to run always will still run.
alumnodt@pc1damA-19:~/Escritorio/Vagrant/Vagrant_Practica$
```

---

## Parte 4 – Carpetas sincronizadas

13. Crea una carpeta llamada **datos\_host** en el host.

```
vagrant@vagrant-ubuntu-trusty-64:~$ ls
vagrant@vagrant-ubuntu-trusty-64:~$ cd /
vagrant@vagrant-ubuntu-trusty-64:/$ ls
bin  dev  home  initrd.img.old  lib64  media  opt  root  sbin  sys  usr  var  vmlinuz.old
boot  etc  initrd.img  lib  lost+found  mnt  proc  run  srv  vagrant  vmlinuz
vagrant@vagrant-ubuntu-trusty-64:/$ mkdir datos_host
mkdir: cannot create directory 'datos_host': Permission denied
vagrant@vagrant-ubuntu-trusty-64:/$ sudo su
bash: warning: setlocale: LC_ALL: cannot change locale (es_ES.UTF-8)
root@vagrant-ubuntu-trusty-64:/# mkdir datos_host
No command 'mkdir' found, did you mean:
  Command 'mkdr' from package 'coreutils' (main)
  mkdr: command not found
root@vagrant-ubuntu-trusty-64:/# mkdir datos_host
root@vagrant-ubuntu-trusty-64:/#
```

14. Configura una carpeta sincronizada con la VM en **/vagrant/datos**.

```

config.vm.network "private_network",
  ip: "192.168.56.20",
  netmask: "255.255.248.0"
config.vm.box = "ubuntu/trusty64"
config.vm.network "forwarded_port", guest: 80, host: 8080
config.vm.synced_folder "../vagrant/datos", "/datos_host"

```

15. Crea un fichero desde el host y verifica que aparece en la VM.

```

vagrant@vagrant-ubuntu-trusty-64:~$ cd /
vagrant@vagrant-ubuntu-trusty-64:/$ ls
bin          etc          lib          mnt          run          tmp          vmlinuz
boot        home        lib64        opt          sbin        usr          vmlinuz.old
datos_host  initrd.img   lost+found  proc        srv         vagrant
dev          initrd.img.old media       root        sys         var
vagrant@vagrant-ubuntu-trusty-64:/$ ls datos_host/
holaolha
vagrant@vagrant-ubuntu-trusty-64:/$ ls -lrt datos_host/
total 0
-rw-r----- 1 vagrant vagrant 0 Feb 10 11:15 holaolha
vagrant@vagrant-ubuntu-trusty-64:$

```

16. Crea un fichero desde la VM y verifica que aparece en el host.

```

vagrant@vagrant-ubuntu-trusty-64:/$ nano datos_host/hola.txt
vagrant@vagrant-ubuntu-trusty-64:$

```



## Parte 5 – Aprovisionamiento (Shell)

17. Añade un aprovisionamiento por **shell** que realice:

- Actualización del sistema.
- Instalación de **apache2**.
- Habilitación del servicio para que arranque automáticamente.

```

config.vm.provision "shell", inline: <<-SHELL
  apt-get update
  apt-get install -y apache2
  apt-get upgrade
  systemctl enable apache2
  systemctl restart apache2
SHELL

```

18. Elimina la web por defecto de Apache.

Cambio a windows personal, con la misma vagrant file, excepto el apache

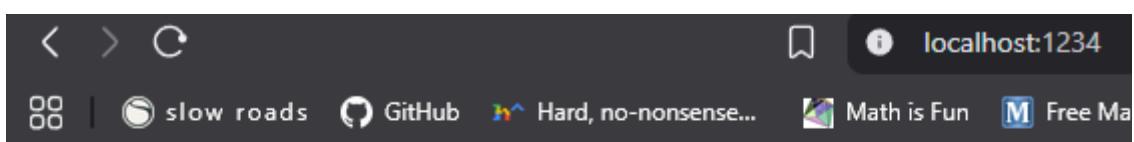
```
config.vm.provision "shell", inline: <<-SHELL
  apt-get update
  apt-get install -y apache2
  apt-get upgrade
  systemctl enable apache2
  systemctl restart apache2
  rm -rf /var/www/html/index.html
  cat << EOF > /var/www/html/index.html
```

19. Crea un `index.html` personalizado que muestre:

- Nombre del alumno.
- Fecha de creación.

```
config.vm.provision "shell", inline: <<-SHELL
  apt-get update -y
  apt-get upgrade -y
  apt-get install -y apache2
  systemctl enable apache2
  systemctl restart apache2
  rm -rf /var/www/html/index.html
  cat << EOF > /var/www/html/index.html
  <!DOCTYPE html>
  <html lang="es">
    <head>
      <meta charset="utf-8">
      <title> Vagrant + Apache </title>
    </head>
    <body>
      <h1>Enrique Fernandez Sanz</h1>
      <h2>13/02/2025</h2>
    </body>
  </html>
EOF
SHELL
```

20. Accede desde el navegador del host a la web servida por la VM.



# Enrique Fernandez Sanz

13/02/2025

---

## Parte 6 – Entorno multi-máquina

27. Modifica el `Vagrantfile` para que cree **dos máquinas virtuales**

- `webserver`
- `dbserver`

28. Configuración de `webserver`:

- Box: `ubuntu/focal64`
- Hostname: `dev.fullstack.local`

```
config.vm.define "webserver" do |web|
  web.vm.box = "ubuntu/focal64"
  web.vm.hostname = "dev.fullstack.local"
```

- **Red privada:**

- IP: `10.0.15.10`
- Máscara: `255.255.255.0`

```
web.vm.network "private_network",
  ip: "10.0.15.10",
  netmask: "255.255.255.0"
```

- **Red pública (bridge):**

- Conectada a tu tarjeta de red física.

```
web.vm.network "public_network"
```

- **Port forwarding:**

- Puerto 2563 → host 2354
- Puerto 5000 → host 5001
- Puerto 3306 → host 3306 (solo accesible desde `127.0.0.1`)

```
web.vm.network "forwarded_port", guest: 2563, host: 2354
web.vm.network "forwarded_port", guest: 5000, host: 5001
web.vm.network "forwarded_port", guest: 3306, host: 3306, host_ip: "127.0.0.1"
```

- Recursos:

- 2 GB de RAM
- 1 CPU

```
web.vm.provider "virtualbox" do |vb|
  vb.memory = "2048"
  vb.cpus = 1
end
```

29. Añade un aprovisionamiento por **shell** en **webserver**:

- Instala un servidor nginx.
- Crea una index.html en la dirección .

```
web.vm.provision "shell", inline: <<-SHELL
  apt-get update -y
  apt-get install -y nginx
  systemctl enable nginx
  systemctl start nginx

  echo "<h1>Servidor Web Nginx funcionando</h1>" > /var/www/html/index.html
SHELL
```

---

## Parte 7 – Segunda máquina (dbserver)

30. Configuración de **dbserver**:

- Box: **ubuntu/focal64**
- Hostname: **db.fullstack.local**

```
config.vm.define "dbserver" do |db|
  db.vm.box = "ubuntu/focal64"
  db.vm.hostname = "db.fullstack.local"
```

- Red privada:

- IP: **10.0.15.11**

```
db.vm.network "private_network", ip: "10.0.15.11"
```

- Recursos:

- 512 MB de RAM
  - 1 CPU

```
db.vm.provider "virtualbox" do |vb|
  vb.memory = "512"
  vb.cpus = 1
end
```

31. Añade un aprovisionamiento que:

- Actualice el sistema.
- Instale **mysql-server**.
- Deje el servicio arrancado.

```
db.vm.provision "shell", inline: <<-SHELL
  apt-get update -y
  apt-get install -y mysql-server
  systemctl enable mysql
  systemctl start mysql
SHELL
end
```

32. Comprueba desde `devserver` que:

```
PS C:\Users\lokom\Desktop\Vagrant\PracticaAmpliacion> vagrant ssh webserver
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.4.0-216-generic x86_64)

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

System information as of Sun Feb 15 22:19:09 UTC 2026

  System load:          0.0
  Usage of /:           4.9% of 38.70GB
  Memory usage:         12%
  Swap usage:           0%
  Processes:            111
  Users logged in:     0
  IPv4 address for enp0s3: 10.0.2.15
  IPv6 address for enp0s3: fd17:625c:f037:2:1a:a2ff:fe1e:9db7
  IPv4 address for enp0s9: 192.168.1.21

Expanded Security Maintenance for Infrastructure is not enabled.

21 updates can be applied immediately.
15 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

90 additional security updates can be applied with ESM Infra.
Learn more about enabling ESM Infra service for Ubuntu 20.04 at
https://ubuntu.com/20-04
```

- Hay conectividad con `dbserver` usando la IP privada.

```
vagrant@dev:~$ ping 10.0.15.11
PING 10.0.15.11 (10.0.15.11) 56(84) bytes of data.
64 bytes from 10.0.15.11: icmp_seq=1 ttl=64 time=0.714 ms
64 bytes from 10.0.15.11: icmp_seq=2 ttl=64 time=0.574 ms
64 bytes from 10.0.15.11: icmp_seq=3 ttl=64 time=0.539 ms
64 bytes from 10.0.15.11: icmp_seq=4 ttl=64 time=0.519 ms
64 bytes from 10.0.15.11: icmp_seq=5 ttl=64 time=0.535 ms
64 bytes from 10.0.15.11: icmp_seq=6 ttl=64 time=0.448 ms
64 bytes from 10.0.15.11: icmp_seq=7 ttl=64 time=0.499 ms
64 bytes from 10.0.15.11: icmp_seq=8 ttl=64 time=0.496 ms
64 bytes from 10.0.15.11: icmp_seq=9 ttl=64 time=0.539 ms
64 bytes from 10.0.15.11: icmp_seq=10 ttl=64 time=0.485 ms
```

---

## Parte 8 – Gestión del ciclo de vida

33. Ejecuta y documenta:

- `vagrant status`

```
PS C:\Users\lokom\Desktop\Vagrant\PracticaAmpliacion> vagrant status
Current machine states:
```

webserver	running (virtualbox)
dbserver	running (virtualbox)

This environment represents multiple VMs. The VMs are all listed above with their current state. For more information about a specific VM, run `vagrant status NAME`.

```
PS C:\Users\lokom\Desktop\Vagrant\PracticaAmpliacion>
```

- `vagrant up`

```
PS C:\Users\lokom\Desktop\Vagrant\PracticaAmpliacion> vagrant up
Bringing machine 'webserver' up with 'virtualbox' provider...
Bringing machine 'dbserver' up with 'virtualbox' provider...
==> webserver: Checking if box 'ubuntu/focal64' version '20240821.0.1' is up to date...
==> webserver: Machine already provisioned. Run 'vagrant provision' or use the '--provision'
==> webserver: flag to force provisioning. Provisioners marked to run always will still run.
==> dbserver: Checking if box 'ubuntu/focal64' version '20240821.0.1' is up to date...
==> dbserver: Machine already provisioned. Run 'vagrant provision' or use the '--provision'
==> dbserver: flag to force provisioning. Provisioners marked to run always will still run.
```

- `vagrant halt devserver`

```
PS C:\Users\lokom\Desktop\Vagrant\PracticaAmpliacion> vagrant halt webserver
==> webserver: Attempting graceful shutdown of VM...
PS C:\Users\lokom\Desktop\Vagrant\PracticaAmpliacion> |
```

- `vagrant up devserver`

```
PS C:\Users\lokom\Desktop\Vagrant\PracticaAmpliacion> vagrant up webserver
Bringing machine 'webserver' up with 'virtualbox' provider...
==> webserver: Checking if box 'ubuntu/focal64' version '20240821.0.1' is up to date...
==> webserver: Clearing any previously set forwarded ports...
==> webserver: Fixed port collision for 22 => 2222. Now on port 2200.
==> webserver: Clearing any previously set network interfaces...
==> webserver: Preparing network interfaces based on configuration...
    webserver: Adapter 1: nat
    webserver: Adapter 2: hostonly
    webserver: Adapter 3: bridged
==> webserver: Forwarding ports...
    webserver: 2563 (guest) => 2354 (host) (adapter 1)
    webserver: 5000 (guest) => 5001 (host) (adapter 1)
    webserver: 3306 (guest) => 3306 (host) (adapter 1)
    webserver: 22 (guest) => 2200 (host) (adapter 1)
==> webserver: Running 'pre-boot' VM customizations...
==> webserver: Booting VM...
==> webserver: Waiting for machine to boot. This may take a few minutes...
    webserver: SSH address: 127.0.0.1:2200
    webserver: SSH username: vagrant
    webserver: SSH auth method: private key
    webserver: Warning: Connection reset. Retrying...
==> webserver: Machine booted and ready!
[webserver] GuestAdditions 7.2.4 running --- OK.
==> webserver: Checking for guest additions in VM...
==> webserver: Setting hostname...
==> webserver: Configuring and enabling network interfaces...
==> webserver: Mounting shared folders...
    webserver: C:/Users/Lokom/Desktop/Vagrant/PracticaAmpliacion => /vagrant
==> webserver: Machine already provisioned. Run 'vagrant provision' or use the '--provision'
==> webserver: flag to force provisioning. Provisioners marked to run always will still run.
PS C:\Users\lokom\Desktop\Vagrant\PracticaAmpliacion> |
```

- **vagrant reload**

```
PS C:\Users\lokom\Desktop\Vagrant\PracticaAmpliacion> vagrant reload
==> webserver: Attempting graceful shutdown of VM...
==> webserver: Checking if box 'ubuntu/focal64' version '20240821.0.1' is up to date...
==> webserver: Clearing any previously set forwarded ports...
==> webserver: Fixed port collision for 22 => 2222. Now on port 2200.
==> webserver: Clearing any previously set network interfaces...
==> webserver: Preparing network interfaces based on configuration...
    webserver: Adapter 1: nat
    webserver: Adapter 2: hostonly
    webserver: Adapter 3: bridged
==> webserver: Forwarding ports...
    webserver: 2563 (guest) => 2354 (host) (adapter 1)
    webserver: 5000 (guest) => 5001 (host) (adapter 1)
    webserver: 3306 (guest) => 3306 (host) (adapter 1)
    webserver: 22 (guest) => 2200 (host) (adapter 1)
==> webserver: Running 'pre-boot' VM customizations...
==> webserver: Booting VM...
==> webserver: Waiting for machine to boot. This may take a few minutes...
    webserver: SSH address: 127.0.0.1:2200
    webserver: SSH username: vagrant
    webserver: SSH auth method: private key
    webserver: Warning: Connection reset. Retrying...
    webserver: Warning: Connection aborted. Retrying...
==> webserver: Machine booted and ready!
[webserver] GuestAdditions 7.2.4 running --- OK.
==> webserver: Checking for guest additions in VM...
==> webserver: Setting hostname...
==> webserver: Configuring and enabling network interfaces...
==> webserver: Mounting shared folders...
    webserver: C:/Users/Lokom/Desktop/Vagrant/PracticaAmpliacion => /vagrant
==> webserver: Machine already provisioned. Run `vagrant provision` or use the `--provision` flag to force provisioning. Provisioners marked to run always will still run.
==> dbserver: Attempting graceful shutdown of VM...
==> dbserver: Checking if box 'ubuntu/focal64' version '20240821.0.1' is up to date...
==> dbserver: Clearing any previously set forwarded ports...
==> dbserver: Fixed port collision for 22 => 2222. Now on port 2201.
==> dbserver: Clearing any previously set network interfaces...
==> dbserver: Preparing network interfaces based on configuration...
    dbserver: Adapter 1: nat
    dbserver: Adapter 2: hostonly
==> dbserver: Forwarding ports...
    dbserver: 22 (guest) => 2201 (host) (adapter 1)
==> dbserver: Running 'pre-boot' VM customizations...
==> dbserver: Booting VM...
==> dbserver: Waiting for machine to boot. This may take a few minutes...
    dbserver: SSH address: 127.0.0.1:2201
    dbserver: SSH username: vagrant
    dbserver: SSH auth method: private key
    dbserver: Warning: Connection reset. Retrying...
==> dbserver: Machine booted and ready!
[dbserver] GuestAdditions 7.2.4 running --- OK.
==> dbserver: Checking for guest additions in VM...
==> dbserver: Setting hostname...
==> dbserver: Configuring and enabling network interfaces...
==> dbserver: Mounting shared folders...
    dbserver: C:/Users/Lokom/Desktop/Vagrant/PracticaAmpliacion => /vagrant
==> dbserver: Machine already provisioned. Run `vagrant provision` or use the `--provision` flag to force provisioning. Provisioners marked to run always will still run.
PS C:\Users\lokom\Desktop\Vagrant\PracticaAmpliacion> |
```

34. Destruye solo una de las máquinas.

```
PS C:\Users\lokom\Desktop\Vagrant\PracticaAmpliacion> vagrant destroy webserver
webserver: Are you sure you want to destroy the 'webserver' VM? [y/N] y
==> webserver: Forcing shutdown of VM...
==> webserver: Destroying VM and associated drives...
```

35. Vuelve a crearla sin afectar a la otra.

```
PS C:\Users\lokom\Desktop\Vagrant\PracticaAmpliacion> vagrant up webserver
Bringing machine 'webserver' up with 'virtualbox' provider...
==> webserver: Importing base box 'ubuntu/focal64'...
==> webserver: Matching MAC address for NAT networking...
==> webserver: Checking if box 'ubuntu/focal64' version '20240821.0.1' is up to date...
==> webserver: Setting the name of the VM: PracticaAmpliacion_webserver_1771194439823_86042
==> webserver: Fixed port collision for 22 => 2222. Now on port 2200.
==> webserver: Clearing any previously set network interfaces...
==> webserver: Preparing network interfaces based on configuration...
    webserver: Adapter 1: nat
    webserver: Adapter 2: hostonly
    webserver: Adapter 3: bridged
==> webserver: Forwarding ports...
    webserver: 2563 (guest) => 2354 (host) (Adapter 1)
    webserver: 5000 (guest) => 5001 (host) (adapter 1)
    webserver: 3306 (guest) => 3306 (host) (adapter 1)
    webserver: 22 (guest) => 2200 (host) (adapter 1)
==> webserver: Running 'pre-boot' VM customizations...
==> webserver: Booting VM...
==> webserver: Waiting for machine to boot. This may take a few minutes...
    webserver: SSH address: 127.0.0.1:2200
    webserver: SSH username: vagrant
    webserver: SSH auth method: private key
    webserver: Warning: Connection aborted. Retrying...
    webserver: Warning: Connection reset. Retrying...
    webserver:
    webserver: Vagrant insecure key detected. Vagrant will automatically replace
    webserver: this with a newly generated keypair for better security.
    webserver:
    webserver: Inserting generated public key within guest...
    webserver: Removing insecure key from the guest if it's present...
    webserver: Key inserted! Disconnecting and reconnecting using new SSH key...
==> webserver: Machine booted and ready!
[webserver] A Virtualbox Guest Additions installation was found but no tools to rebuild or start them.
Reading package lists...
Building dependency tree...
Reading state information...
Package 'virtualbox-guest-x11' is not installed, so not removed
```

---