

TALLER 3

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1. INTRODUCCIÓN

Vagrant es una herramienta para crear entornos de desarrollo completos. Con un flujo de trabajo fácil de usar y centrado en la automatización, reduce el tiempo de configuración del entorno de desarrollo, aumenta la paridad entre desarrollo-producción, y hace que las “obras en mi máquina” sean una reliquia del pasado.

Otto es el sucesor de Vagrant.

Los creadores de Otto son también los creadores de Vagrant. Después de trabajar en Vagrant más de seis años, los autores consideran que Otto es una herramienta superior para el desarrollo y mucho más. Vagrant todavía llenará un papel importante para algunos usuarios, pero para la mayoría de los desarrolladores, Otto reemplazará Vagrant con el tiempo.

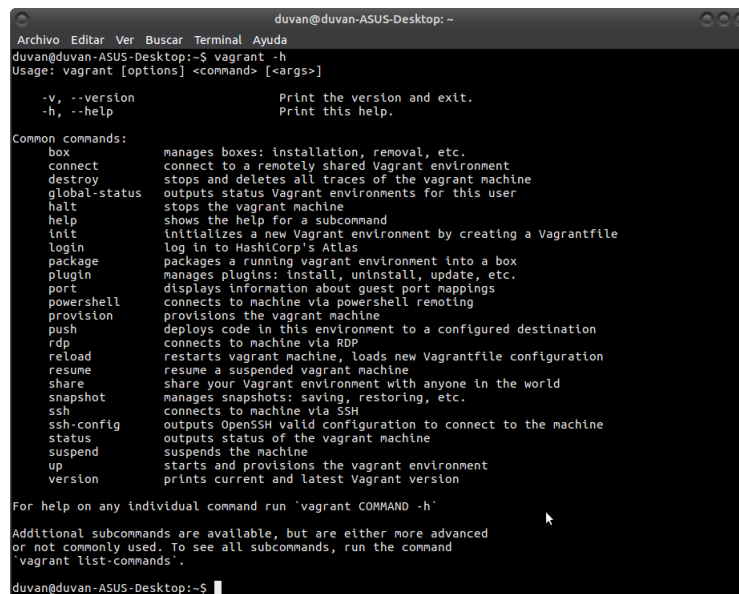
Aunque creen que Otto es un sucesor de Vagrant, el desarrollo de Vagrant continuará en los próximos años. Otto se basa en Vagrant, por lo que las mejoras de Vagrant beneficiarán a los usuarios Otto también. tomado de Vagrant-Hashicorp y Otto-Hashicorp

2. OBJETIVO

Realizar el despliegue de entornos de desarrollo sencillos mediante la tecnología Vagrant utilizando como proveedor de infraestructura la tecnología VirtualBox.

3. ACTIVIDADES

1. Abrir una consola de comandos.
2. Validar la correcta instalación del software Vagrant ejecutando el comando `vagrant -h`



```
duvan@duvan-ASUS-Desktop: ~
Archivo Editar Ver Buscar Terminal Ayuda
duvan@duvan-ASUS-Desktop:~$ vagrant -h
Usage: vagrant [options] <command> [-<args>]

-v, --version          Print the version and exit.
-h, --help             Print this help.

Common commands:
box                    manages boxes: installation, removal, etc.
connect               connect to a remotely shared Vagrant environment
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                log in to HashiCorp's Atlas
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
share                share your Vagrant environment with anyone in the world
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
version              prints current and latest Vagrant version

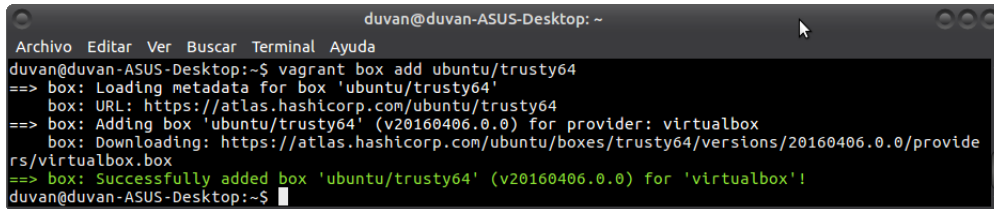
For help on any individual command run 'vagrant COMMAND -h'

Additional subcommands are available, but are either more advanced
or not commonly used. To see all subcommands, run the command
'vagrant list-commands'.

duvan@duvan-ASUS-Desktop:~$
```

Figura 1: Verificación por consola de la instalación de Vagrant

- Adicionar la imagen del sistema operativo Ubuntu Trusty de 64 bits. Para ello, ejecutar el comando `vagrant box add ubuntu/trusty64`. La descarga debe tomar alrededor de 5 minutos.



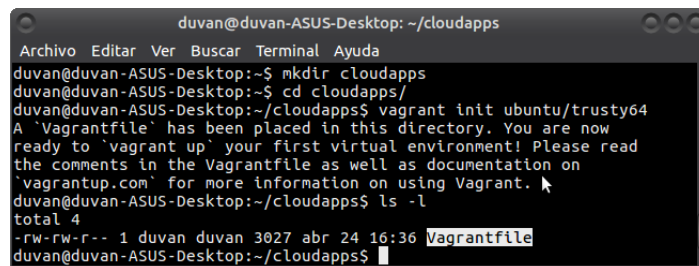
```

duvan@duvan-ASUS-Desktop: ~
Archivo Editar Ver Buscar Terminal Ayuda
duvan@duvan-ASUS-Desktop:~$ vagrant box add ubuntu/trusty64
==> box: Loading metadata for box 'ubuntu/trusty64'
box: URL: https://atlas.hashicorp.com/ubuntu/trusty64
==> box: Adding box 'ubuntu/trusty64' (v20160406.0.0) for provider: virtualbox
box: Downloading: https://atlas.hashicorp.com/ubuntu/boxes/trusty64/versions/20160406.0.0/provide
rs/virtualbox.box
==> box: Successfully added box 'ubuntu/trusty64' (v20160406.0.0) for 'virtualbox'!
duvan@duvan-ASUS-Desktop:~$

```

Figura 2: Adición del sistema operativo Ubuntu Trusty de 64 bits

- Crear un directorio de trabajo clouapps (o cualquier otro nombre). Ingresar a ese directorio en la consola y ejecutar el comando `vagrant init ubuntu/trusty64`. Después de ejecutar el comando, verificar que se haya creado un archivo denominado `Vagrantfile`.



```

duvan@duvan-ASUS-Desktop: ~/cloudapps
Archivo Editar Ver Buscar Terminal Ayuda
duvan@duvan-ASUS-Desktop:~$ mkdir cloudapps
duvan@duvan-ASUS-Desktop:~$ cd cloudapps/
duvan@duvan-ASUS-Desktop:~/cloudapps$ vagrant init ubuntu/trusty64
A 'Vagrantfile' has been placed in this directory. You are now
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.
duvan@duvan-ASUS-Desktop:~/cloudapps$ ls -l
total 4
-rw-rw-r-- 1 duvan duvan 3027 abr 24 16:36 Vagrantfile
duvan@duvan-ASUS-Desktop:~/cloudapps$

```

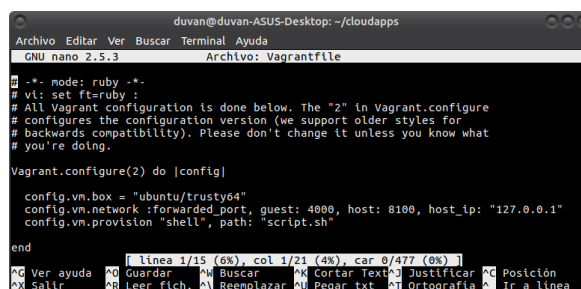
Figura 3: Creación del directorio clouapps

- Editar el archivo `Vagrantfile` de forma que contenga la siguiente información

```

1
2
3 # -*- mode: ruby -*-
4 # vi: set ft=ruby :
5 # All Vagrant configuration is done below. The "2" in Vagrant.configure
6 # configures the configuration version (we support older styles for
7 # backwards compatibility). Please don't change it unless you know what
8 # you're doing.
9 Vagrant.configure(2) do |config|
10   config.vm.box = "ubuntu/trusty64"
11   config.vm.network :forwarded_port, guest: 4000, host: 8100, host_ip: "127.0.0.1"
12   config.vm.provision "shell", path: "script.sh"
13 end

```



```

duvan@duvan-ASUS-Desktop: ~/cloudapps
GNU nano 2.5.3 Archivo: 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|
  config.vm.box = "ubuntu/trusty64"
  config.vm.network :forwarded_port, guest: 4000, host: 8100, host_ip: "127.0.0.1"
  config.vm.provision "shell", path: "script.sh"
end

```

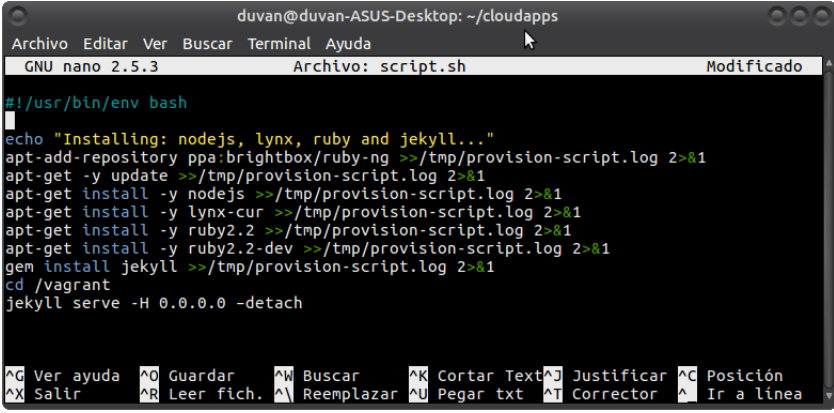
Figura 4: Archivo `Vagrantfile` editado.

6. Crear un archivo “script.sh” en el mismo directorio del archivo Vagrantfile.
7. Escribir el siguiente contenido en el archivo “script.sh”

```

2  #!/usr/bin/env bash
  echo "Installing: nodejs, lynx, ruby and jekyll..."
4  apt-add-repository ppa:brightbox/ruby-ng &&&/tmp/provision-script.log ...
  &&&1
6  apt-get -y update &&&/tmp/provision-script.log 2&&&1
  apt-get install -y nodejs &&&/tmp/provision-script.log 2&&&1
8  apt-get install -y lynx-cur &&&/tmp/provision-script.log 2&&&1
  apt-get install -y ruby2.2 &&&/tmp/provision-script.log 2&&&1
10 apt-get install -y ruby2.2-dev &&&/tmp/provision-script.log 2&&&1
  gem install jekyll &&&/tmp/provision-script.log 2&&&1
12 cd /vagrant
  jekyll serve -H 0.0.0.0 -detach

```



```

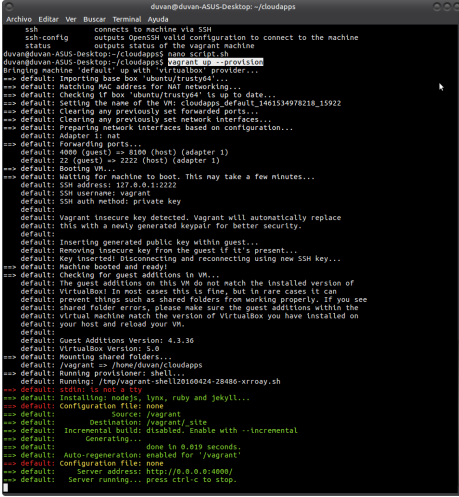
duvan@duvan-ASUS-Desktop: ~/cloudapps
Archivo Editar Ver Buscar Terminal Ayuda
GNU nano 2.5.3 Archivo: script.sh Modificado
#!/usr/bin/env bash
echo "Installing: nodejs, lynx, ruby and jekyll..."
apt-add-repository ppa:brightbox/ruby-ng >>/tmp/provision-script.log 2>&1
apt-get -y update >>/tmp/provision-script.log 2>&1
apt-get install -y nodejs >>/tmp/provision-script.log 2>&1
apt-get install -y lynx-cur >>/tmp/provision-script.log 2>&1
apt-get install -y ruby2.2 >>/tmp/provision-script.log 2>&1
apt-get install -y ruby2.2-dev >>/tmp/provision-script.log 2>&1
gem install jekyll >>/tmp/provision-script.log 2>&1
cd /vagrant
jekyll serve -H 0.0.0.0 -detach

```

Figura 5: Archivo script.sh editado.

8. Ejecutar el comando `vagrant up --provision`.

Con lo que obtenemos la siguiente respuesta:



```

duvan@duvan-ASUS-Desktop: ~/cloudapps
ssh connects to machine via SSH
ssh-config outputs OpenSSH valid configuration to connect to the machine
status outputs status of the vagrant machine
duvan@duvan-ASUS-Desktop: ~/cloudapps $ vagrant up --provision
duvan@duvan-ASUS-Desktop: ~/cloudapps $
Bringing machine 'default' up with 'virtualbox' provider...
-- default: Importing base box 'ubuntu/trusty64'...
-- default: Matching host address for NAT networking...
-- default: Checking if box 'ubuntu/trusty64' is up to date...
-- default: Setting the name of the VM: cloudapps_default_346324978218_35922
-- 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:  ssh (guest) => 2200 (host) (adapter 1)
-- default:  22 (guest) => 2222 (host) (adapter 1)
-- 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: Vagrant insecure key detected. Vagrant will automatically replace
-- default:  this with a newly generated keypair for better security.
-- 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: Checking for guest additions in VM...
-- default:  The guest additions on this VM do not match the installed version of
-- default:  VirtualBox! In most cases this is fine, but in rare cases it can
-- default:  prevent things such as shared folders from working properly. If you see
-- default:  shared folder errors, please make sure the guest additions within the
-- default:  Virtual Machine match the version of VirtualBox you have installed on
-- default:  your host and reload your VM.
-- default: Guest Additions Version: 4.3.36
-- default: VirtualBox Version: 5.0
-- default: Mounting shared folders...
-- default:  /vagrant => /home/duvan/cloudapps
-- default: Running provisioners: shell...
-- default: Running: /tmp/vagrant-shell20160424-28486-xrroay.sh
-- default:  ruby, nodejs, lynx, ruby and jekyll...
-- default: Configuration file: none
-- default:  Source: /vagrant
-- default:  Destination: /vagrant/site
-- default:  Incremental build: disabled. Enable with --incremental
-- default: Generating...
-- default:  done in 0.019 seconds.
-- default: Auto-regeneration: enabled for '/vagrant'
-- default: Configuration file: none
-- default:  Server address: http://0.0.0.0:4000/
-- default:  Server running... press ctrl-c to stop.

```

Figura 6: Ejecución del comando `vagrant up --provision`.

A continuación se muestra con más detalle el resultado al ejecutar el comando `vagrant up --provision`:

```

duvan@duvan-ASUS- Desktop: ~/cloudapps$ vagrant up -- provision
2 Bringing machine 'default'; up with 'virtualbox' provider...
   => default: Importing base box 'ubuntu/trusty64';...
4   => default: Matching MAC address for NAT networking...
   => default: Checking if box 'ubuntu/trusty64'; is up to date...
6   => default: Setting the name of the VM: cloudapps_default_1461534978218_15922
   => default: Clearing any previously set forwarded ports...
8   => default: Clearing any previously set network interfaces...
   => default: Preparing network interfaces based on configuration...
10 default: Adapter 1: nat
   => default: Forwarding ports...
12 default: 4000 (guest) => 8100 (host) (adapter 1)
   default: 22 (guest) => 2222 (host) (adapter 1)
14   => default: Booting VM...
   => default: Waiting for machine to boot. This may take a few minutes...
16 default: SSH address: 127.0.0.1:2222
   default: SSH username: vagrant
18 default: SSH auth method: private key
   default:
20 default: Vagrant insecure key detected. Vagrant will automatically replace
   default: this with a newly generated keypair for better security.
22 default:
   default: Inserting generated public key within guest...
24 default: Removing insecure key from the guest if it's present...
   default: Key inserted! Disconnecting and reconnecting using new SSH key...
26   => default: Machine booted and ready!
   => default: Checking for guest additions in VM...
28 default: The guest additions on this VM do not match the installed version of
   default: VirtualBox! In most cases this is fine, but in rare cases it can
30 default: prevent things such as shared folders from working properly. If you see
   default: shared folder errors, please make sure the guest additions within the
32 default: virtual machine match the version of VirtualBox you have installed on
   default: your host and reload your VM.
34 default:
   default: Guest Additions Version: 4.3.36
36 default: VirtualBox Version: 5.0
   => default: Mounting shared folders...
38 default: /vagrant => /home/duvan/cloudapps
   => default: Running provisioner: shell...
40 default: Running: /tmp/vagrant-shell20160424-28486-xrroay.sh
   => default: stdin: is not a tty
42   => default: Installing: nodejs, lynx, ruby and jekyll...
   => default: Configuration file: none
44   => default: Source: /vagrant
   => default: Destination: /vagrant/_site
46   => default: Incremental build: disabled. Enable with -- incremental
   => default: Generating...
48   => default: done in 0.019 seconds.
   => default: Auto-regeneration: enabled for '/vagrant';
50   => default: Configuration file: none
   => default: Server address: http://0.0.0.0:4000/
52   => default: Server running... press ctrl-c to stop.

```

9. Verificar el correcto funcionamiento del despliegue accediendo en un navegador (browser) a la dirección: `http://127.0.0.1:8100`.

Se observa la correcta creación de la imagen en VirtualBox:

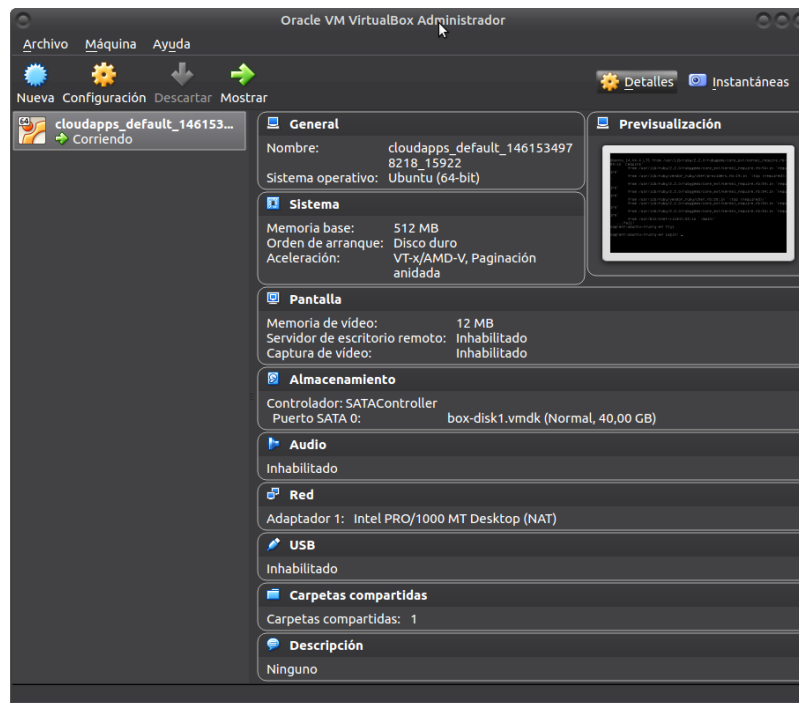


Figura 7: Imagen correctamente montada en VirtualBox.

Se procede a lanzar la máquina y verificar su funcionamiento en un navegador en la dirección: <http://127.0.0.1:8100>.

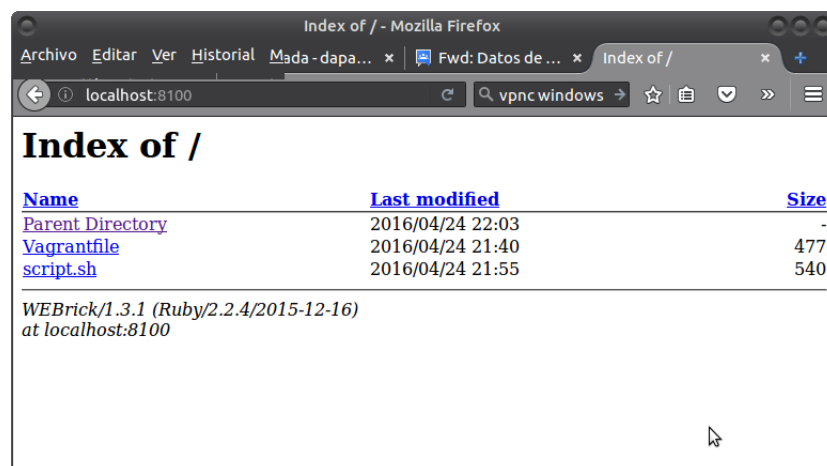


Figura 8: Validación del funcionamiento de la máquina virtual creada en Vagrant.

4. BIBLIOGRAFÍA

- <https://www.vagrantup.com/about.html>
- <https://www.ottoproject.io/intro/vagrant-successor.html>