

# MANUAL COMPLETO DE INSTALACIÓN DEL AMBIENTE DE CNCFLORA PARA EL INSTITUTO ALEXANDER VON HUMBOLDT

VERSION 1.0 – 01-12-2016

Sede Principal: Calle 28A #15-09 Bogotá, D.C., Colombia | PBX: (57)(1) 3202767 | NIT 820000142-2



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## 1. OBJETO DEL DOCUMENTO

Este documento tiene como objeto mostrar una visión del panorama tecnológico de la aplicación CNCFLORA PORTAL y del clúster de aplicaciones NUVEM de la solución, con el fin de conocer cómo descomprimir la paquetería, instalarla y poder ponerla a punto.

## 2. PARTICIPANTES

En este proceso tiene principal participación el Administrador Técnico del Sistema, el jefe de gestión de aplicaciones del Instituto Alexander von Humboldt y los participantes del proceso de despliegue y paso a producción.

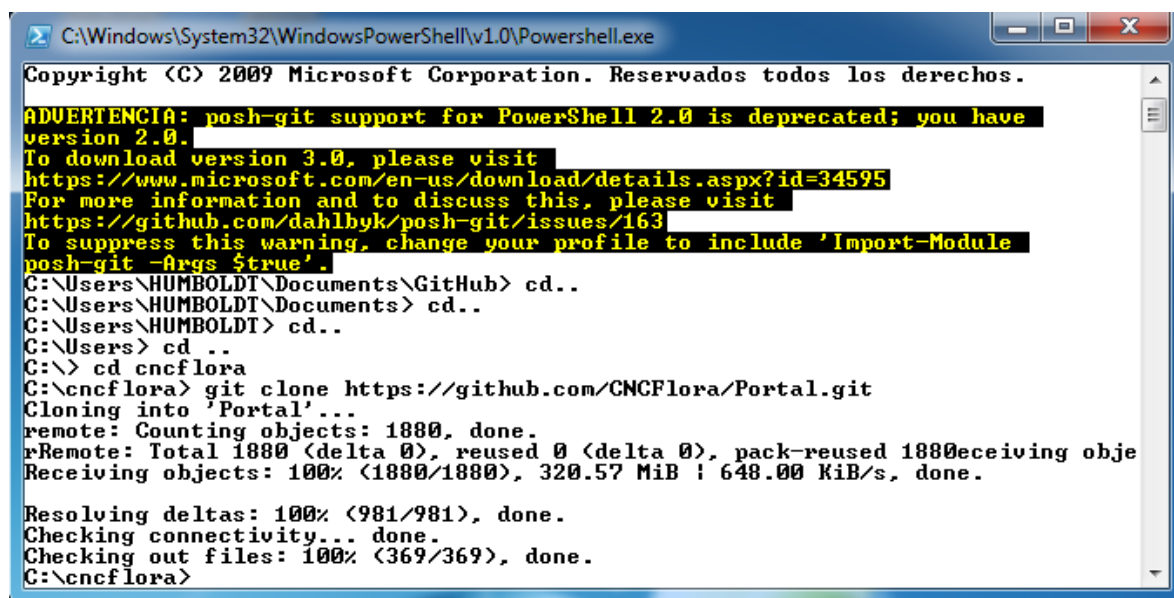
## 3. OBJETIVOS

- a) El objetivo de este proceso, es asegurar el montaje del ambiente de virtualización
- b) Configurar la paquetería base Linux del Sistema Operativo Host de la solución
- c) Habilitar las extensiones técnicas para el correcto funcionamiento de todos los módulos
- d) Poner la solución a punto y ponerla a funcionar en el ambiente virtualizado escogido



#### 4. INSTALACIÓN DE AMBIENTE VAGRANT, GITSHELL Y LÍNEA BASE DE PYTHON EN LA MÁQUINA VIRTUAL LINUX UBUNTU 14.04 DE LA DISTRIBUCIÓN

- 1) Clonar repositorio con el comando git clone <https://github.com/CNCFlora/Portal.git>



```

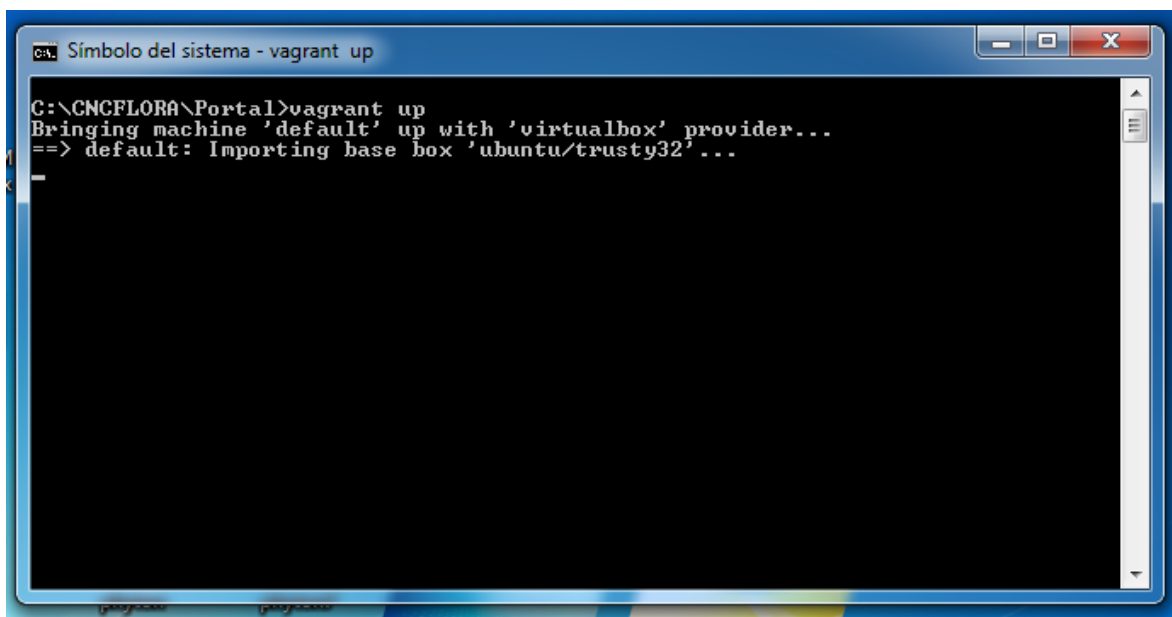
C:\Windows\System32\WindowsPowerShell\v1.0\Powershell.exe
Copyright (C) 2009 Microsoft Corporation. Reservados todos los derechos.
ADVERTENCIA: posh-git support for PowerShell 2.0 is deprecated; you have
version 2.0.
To download version 3.0, please visit
https://www.microsoft.com/en-us/download/details.aspx?id=34595
For more information and to discuss this, please visit
https://github.com/dahlbyk/posh-git/issues/163
To suppress this warning, change your profile to include 'Import-Module
posh-git -Args $true'.
C:\Users\HUMBOLDT\Documents\GitHub> cd..
C:\Users\HUMBOLDT\Documents> cd..
C:\Users\HUMBOLDT> cd..
C:\Users> cd ..
C:\> cd cncflora
C:\cncflora> git clone https://github.com/CNCFlora/Portal.git
Cloning into 'Portal'...
remote: Counting objects: 1880, done.
remote: Total 1880 (delta 0), reused 0 (delta 0), pack-reused 1880
Receiving objects: 100% (1880/1880), 320.57 MiB | 648.00 KiB/s, done.
Resolving deltas: 100% (981/981), done.
Checking connectivity... done.
Checking out files: 100% (369/369), done.
C:\cncflora>
  
```

- 2) Elevar la máquina virtual luego de haber instalado

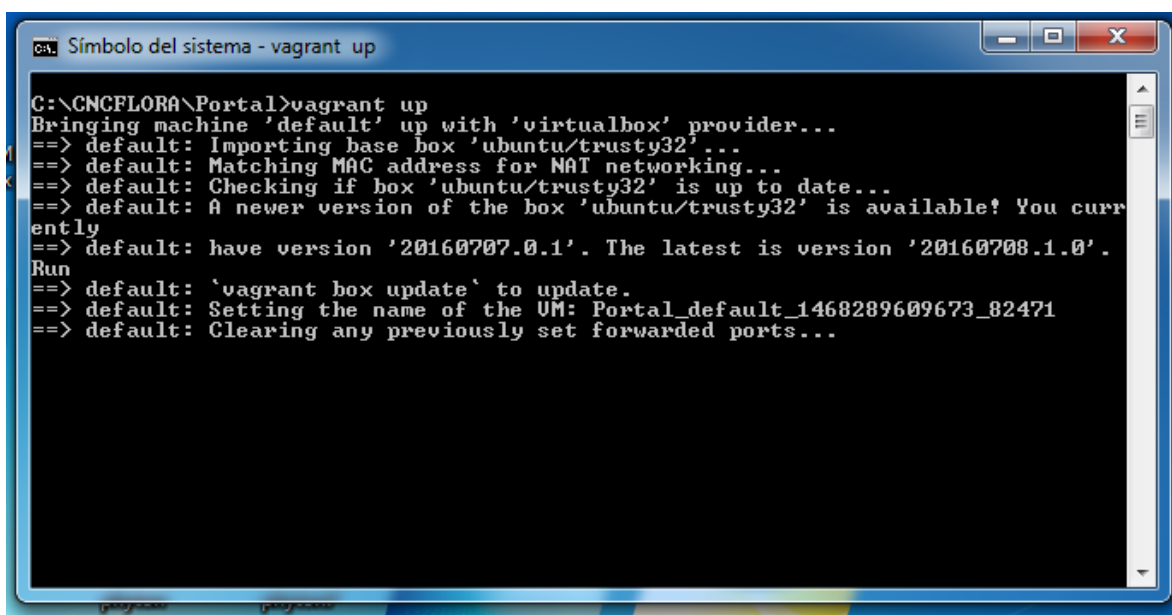
- a) Virtual Box
- b) Pack de actualizaciones
- c) Microsoft Visual C++ 2010 Redistributable

**Comando: vagrant up**



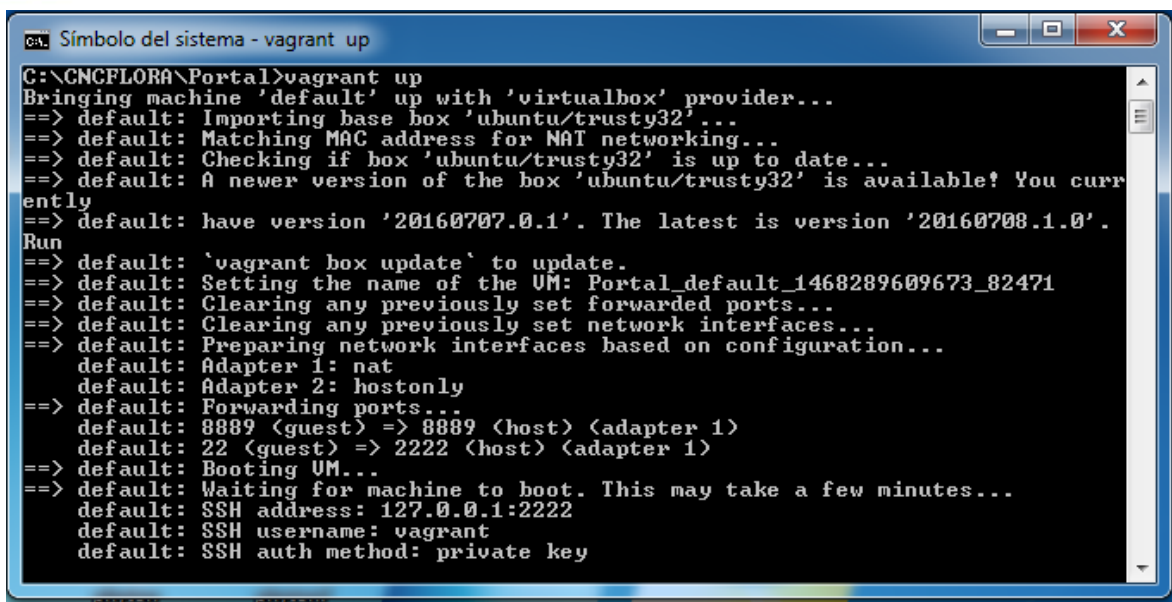


```
C:\CNCFLORA\Portal>vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Importing base box 'ubuntu/trusty32'...
```



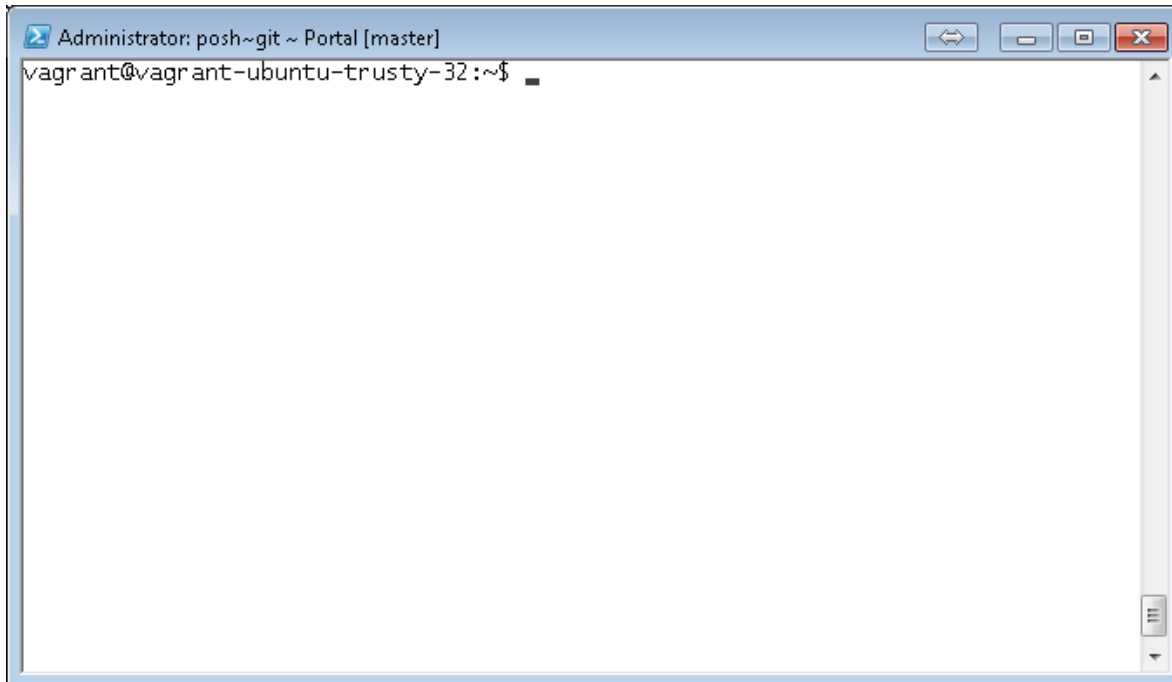
```
C:\CNCFLORA\Portal>vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Importing base box 'ubuntu/trusty32'...
==> default: Matching MAC address for NAT networking...
==> default: Checking if box 'ubuntu/trusty32' is up to date...
==> default: A newer version of the box 'ubuntu/trusty32' is available! You currently
Run
==> default: have version '20160707.0.1'. The latest is version '20160708.1.0'.
==> default: 'vagrant box update' to update.
==> default: Setting the name of the VM: Portal_default_1468289609673_82471
==> default: Clearing any previously set forwarded ports...
```





```
C:\CNCFLORA\Portal>vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Importing base box 'ubuntu/trusty32'...
==> default: Matching MAC address for NAT networking...
==> default: Checking if box 'ubuntu/trusty32' is up to date...
==> default: A newer version of the box 'ubuntu/trusty32' is available! You currently
==> default: have version '20160707.0.1'. The latest is version '20160708.1.0'.
Run
==> default: 'vagrant box update' to update.
==> default: Setting the name of the VM: Portal_default_1468289609673_82471
==> 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: 8889 (guest) => 8889 (host) (adapter 1)
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
```

- 3) Una vez la máquina esté arriba, conectarse desde la consola de GitHub con vagrant ssh



```
Administrator: posh~git ~ Portal [master]
vagrant@vagrant-ubuntu-trusty-32:~$
```

- 4) Instalar el paquete de PYTHON 3, con el comando  
**sudo apt-get install python3-pip**





```
posh~git ~ Portal [master]
libalgorithm-diff-xs-perl libalgorithm-merge-perl libdpkg-perl libexpat1-dev
libfile-fcntllock-perl libpython3-dev libpython3.4 libpython3.4-dev
libstdc++-4.8-dev python-chardet-whl python-colorama-whl python-distlib-whl
python-html5lib-whl python-pip-whl python-requests-whl python-setuptools-whl
python-six-whl python-urllib3-whl python3-chardet python3-colorama
python3-dev python3-distlib python3-html5lib python3-pkg-resources
python3-requests python3-setuptools python3-six python3-urllib3
python3-wheel python3.4-dev
Suggested packages:
  debian-keyring g++-multilib g++-4.8-multilib gcc-4.8-doc libstdc++6-4.8-dbg
  libstdc++-4.8-doc python3-genshi python3-lxml
The following NEW packages will be installed:
  build-essential dpkg-dev g++ g++-4.8 libalgorithm-diff-perl
  libalgorithm-diff-xs-perl libalgorithm-merge-perl libdpkg-perl libexpat1-dev
  libfile-fcntllock-perl libpython3-dev libpython3.4 libpython3.4-dev
  libstdc++-4.8-dev python-chardet-whl python-colorama-whl python-distlib-whl
  python-html5lib-whl python-pip-whl python-requests-whl python-setuptools-whl
  python-six-whl python-urllib3-whl python3-chardet python3-colorama
  python3-dev python3-distlib python3-html5lib python3-pip
  python3-pkg-resources python3-requests python3-setuptools python3-six
  python3-urllib3 python3-wheel python3.4-dev
0 upgraded, 36 newly installed, 0 to remove and 0 not upgraded.
Need to get 41.1 MB of archives.
After this operation, 79.5 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

##### 5) Instalar Python virtual env

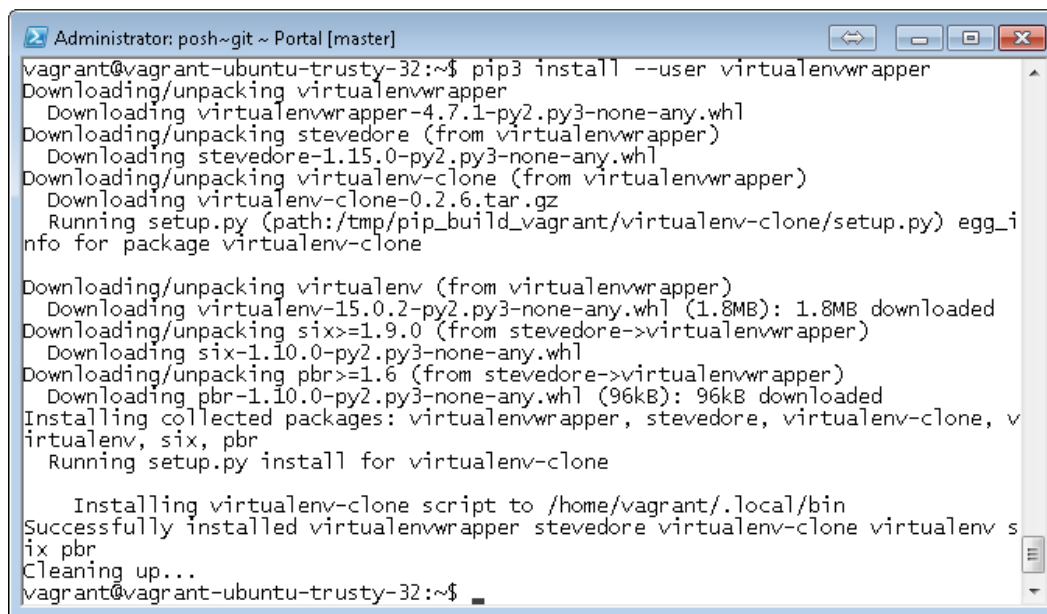
**sudo apt-get install python-virtualenv**

```
Administrator: posh~git ~ Portal [master]
vagrant@vagrant-ubuntu-trusty-32:~$ sudo apt-get install python-virtualenv
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  python-colorama python-distlib python-html5lib python-pip python-setuptools
  python-wheel
Suggested packages:
  python-genshi python-lxml
Recommended packages:
  python-dev-all
The following NEW packages will be installed:
  python-colorama python-distlib python-html5lib python-pip python-setuptools
  python-virtualenv python-wheel
0 upgraded, 7 newly installed, 0 to remove and 0 not upgraded.
Need to get 2,072 kB of archives.
After this operation, 4,682 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
```



6) Bajar el virtualenvwrapper

`pip3 install --user virtualenvwrapper`

A terminal window titled "Administrator: posh~git ~ Portal [master]" showing the command `pip3 install --user virtualenvwrapper` and its output. The output shows the downloading and unpacking of `virtualenvwrapper`, `stevedore`, `virtualenv-clone`, `virtualenv`, `six`, and `pbr`. It also shows the installation of the `virtualenv-clone` script to `/home/vagrant/.local/bin` and the successful installation of `virtualenvwrapper`, `stevedore`, `virtualenv-clone`, `virtualenv`, `six`, and `pbr`. The terminal ends with `Cleaning up...` and the prompt `vagrant@vagrant-ubuntu-trusty-32:~$`.

```
Administrator: posh~git ~ Portal [master]
vagrant@vagrant-ubuntu-trusty-32:~$ pip3 install --user virtualenvwrapper
Downloading/unpacking virtualenvwrapper
  Downloading virtualenvwrapper-4.7.1-py2.py3-none-any.whl
  Downloading/unpacking stevedore (from virtualenvwrapper)
    Downloading stevedore-1.15.0-py2.py3-none-any.whl
  Downloading/unpacking virtualenv-clone (from virtualenvwrapper)
    Downloading virtualenv-clone-0.2.6.tar.gz
    Running setup.py (path:/tmp/pip_build_vagrant/virtualenv-clone/setup.py) egg_i
nfo for package virtualenv-clone

  Downloading/unpacking virtualenv (from virtualenvwrapper)
    Downloading virtualenv-15.0.2-py2.py3-none-any.whl (1.8MB): 1.8MB downloaded
  Downloading/unpacking six>=1.9.0 (from stevedore->virtualenvwrapper)
    Downloading six-1.10.0-py2.py3-none-any.whl
  Downloading/unpacking pbr>=1.6 (from stevedore->virtualenvwrapper)
    Downloading pbr-1.10.0-py2.py3-none-any.whl (96kB): 96kB downloaded
Installing collected packages: virtualenvwrapper, stevedore, virtualenv-clone, v
irtualenv, six, pbr
  Running setup.py install for virtualenv-clone

  Installing virtualenv-clone script to /home/vagrant/.local/bin
Successfully installed virtualenvwrapper stevedore virtualenv-clone virtualenv s
ix pbr
Cleaning up...
vagrant@vagrant-ubuntu-trusty-32:~$
```

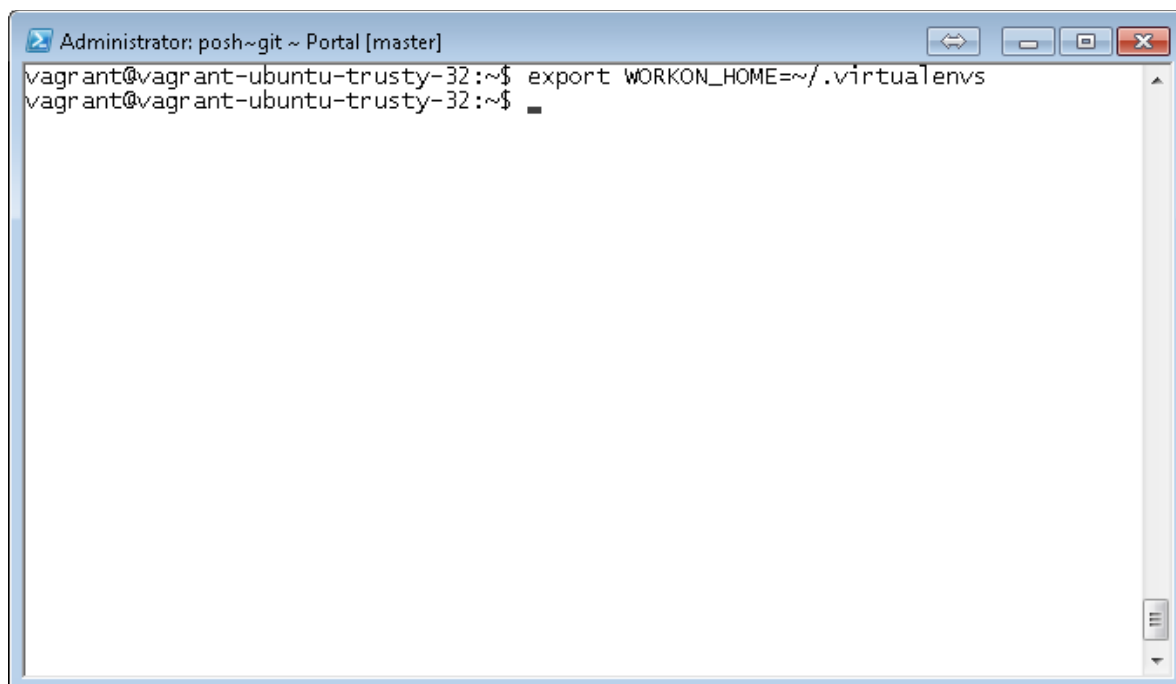
7) Exportar la variable de entorno con

`echo "export VIRTUALENVWRAPPER_PYTHON=/usr/bin/python3" >> ~/.bashrc`

8) Exportar la variable `export WORKON_HOME=~/.virtualenvs`

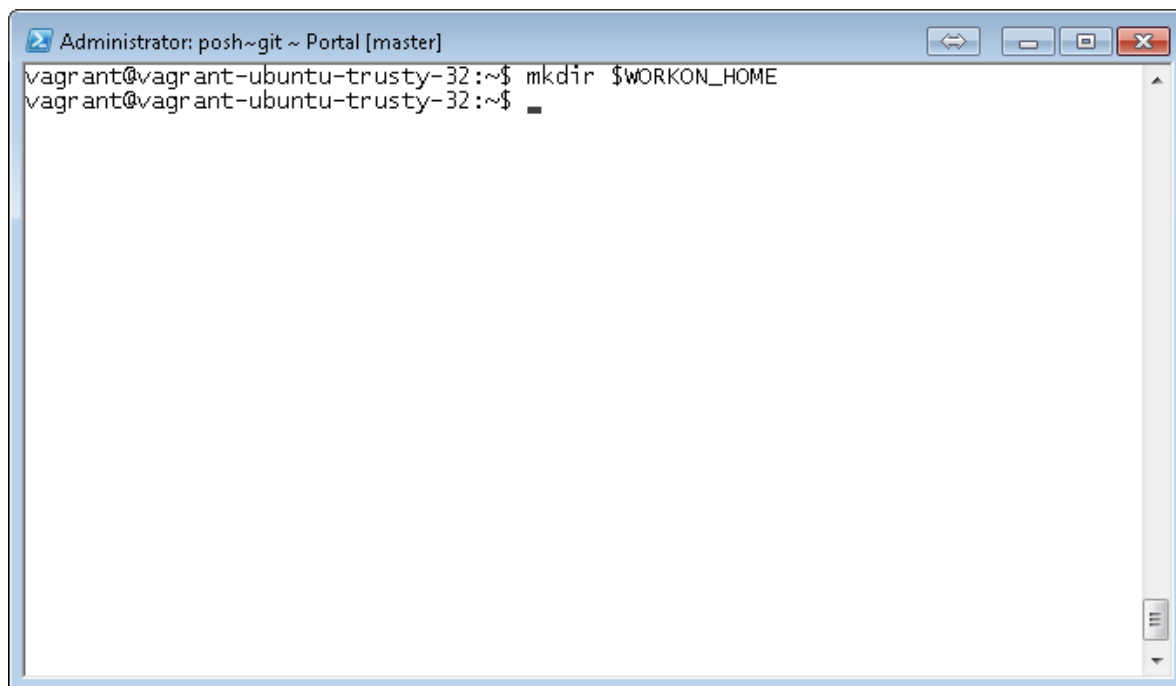




A terminal window titled "Administrator: posh~git ~ Portal [master]" showing a command prompt session. The user is "vagrant" on a "vagrant-ubuntu-trusty-32" machine. The command "export WORKON\_HOME=~/.virtualenvs" has been entered and executed, as indicated by the prompt moving to a new line.

```
Administrator: posh~git ~ Portal [master]
vagrant@vagrant-ubuntu-trusty-32:~$ export WORKON_HOME=~/.virtualenvs
vagrant@vagrant-ubuntu-trusty-32:~$
```

9) Crear el directorio de WORKON\_HOME para la distribución

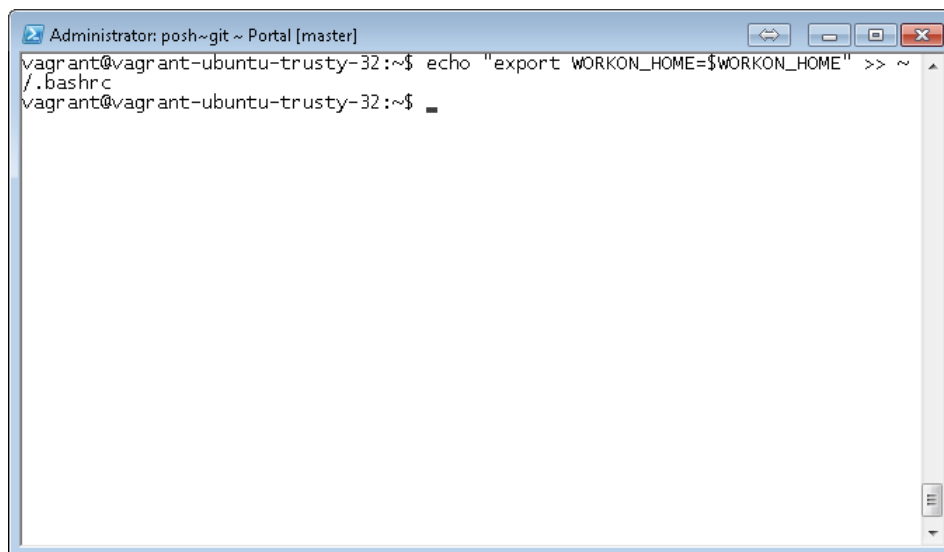
A terminal window titled "Administrator: posh~git ~ Portal [master]" showing a command prompt session. The user is "vagrant" on a "vagrant-ubuntu-trusty-32" machine. The command "mkdir \$WORKON\_HOME" has been entered and executed, as indicated by the prompt moving to a new line.

```
Administrator: posh~git ~ Portal [master]
vagrant@vagrant-ubuntu-trusty-32:~$ mkdir $WORKON_HOME
vagrant@vagrant-ubuntu-trusty-32:~$
```



10) Acto seguido se exporta la variable de entorno al Shell, con el comando

**echo "export WORKON\_HOME=\$WORKON\_HOME" >> ~/.bashrc**

A screenshot of a terminal window titled "Administrator: posh~git ~ Portal [master]". The terminal shows the command `echo "export WORKON_HOME=$WORKON_HOME" >> ~/.bashrc` being executed. The prompt is `vagrant@vagrant-ubuntu-trusty-32:~$`. The command is entered, and the prompt returns. The terminal window has a blue border and standard window controls (minimize, maximize, close) in the top right corner.

11) Se integra el ambiente de vagrant con virtualenv para crear el ambiente de virtualización para NUVEM CNCFLORA



```
Administrator: posh~git ~ Portal [master]
vagrant@vagrant-ubuntu-trusty-32:~$ echo "source ~/.local/bin/virtualenvwrapper
.sh" >> ~/.bashrc
vagrant@vagrant-ubuntu-trusty-32:~$
```

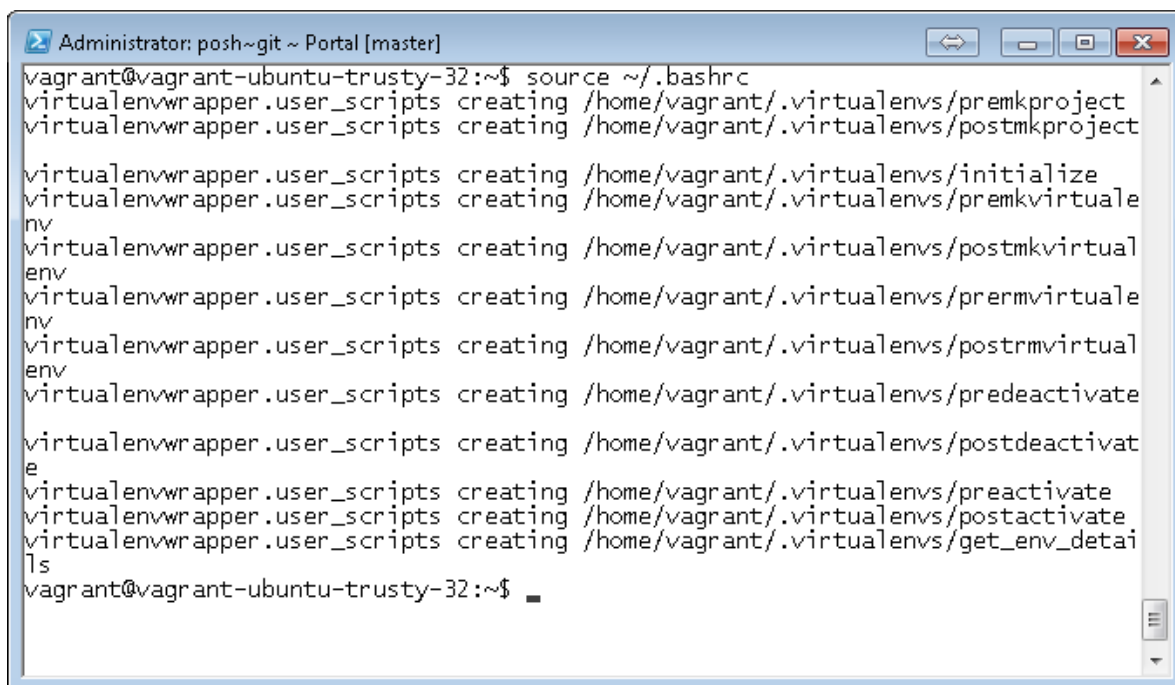
```
Administrator: posh~git ~ Portal [master]
vagrant@vagrant-ubuntu-trusty-32:~$ echo "export PIP_VIRTUALENV_BASE=$WORKON_HO
ME" >> ~/.bashrc
vagrant@vagrant-ubuntu-trusty-32:~$
```

12) Se configura el script de virtualenv para arranque con el Sistema Operativo en los

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próximos reinicios.

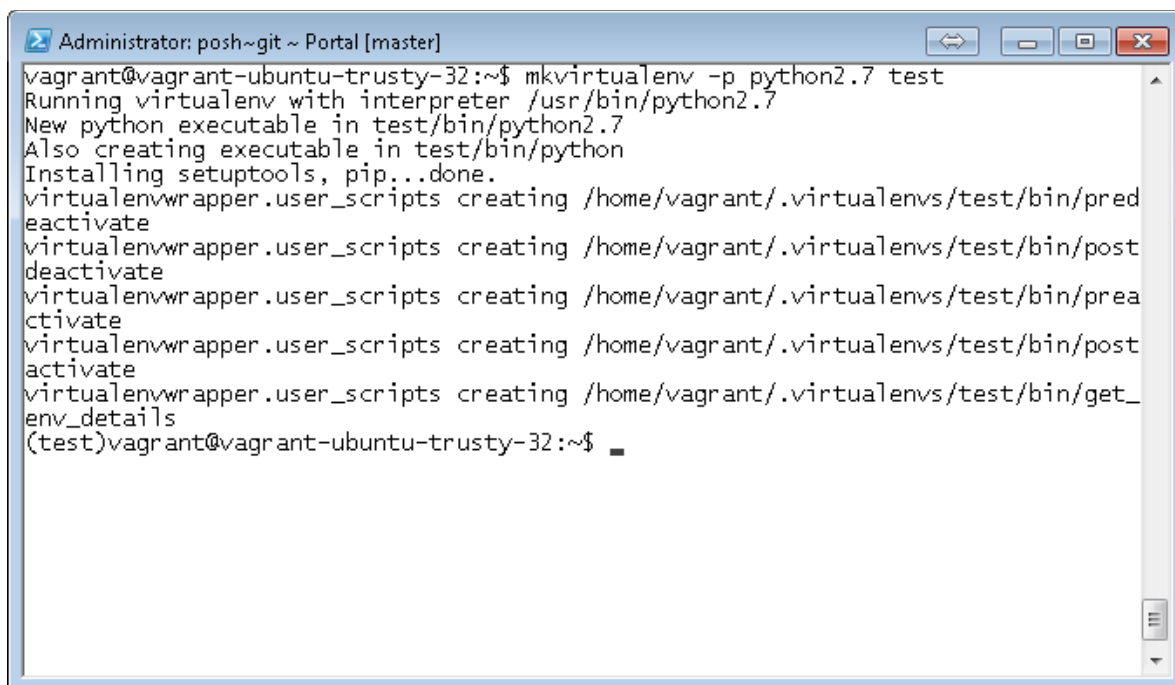
A terminal window titled "Administrator: posh~git ~ Portal [master]" showing the installation of virtualenvwrapper. The user runs "source ~/.bashrc" and then a series of "virtualenvwrapper.user\_scripts creating" commands for various scripts like premkproject, postmkproject, initialize, etc. The prompt returns to "vagrant@vagrant-ubuntu-trusty-32:~\$".

```
Administrator: posh~git ~ Portal [master]
vagrant@vagrant-ubuntu-trusty-32:~$ source ~/.bashrc
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/premkproject
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/postmkproject
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/initialize
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/premkvirtuale
nv
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/postmkvirtual
env
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/prermvirtuale
nv
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/postrmvirtual
env
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/predeactivate
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/postdeactivat
e
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/preactivate
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/postactivate
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/get_env_detai
ls
vagrant@vagrant-ubuntu-trusty-32:~$
```

13) Acto seguido, se procede a validar la instalación con

**mkvirtualenv -p python2.7 test**



A terminal window titled "Administrator: posh~git ~ Portal [master]" showing the command `mkvirtualenv -p python2.7 test` and its output. The output indicates that a virtual environment named 'test' has been created using Python 2.7, and it lists the files being created in the `/home/vagrant/.virtualenvs/test/bin/` directory.

```
Administrator: posh~git ~ Portal [master]
vagrant@vagrant-ubuntu-trusty-32:~$ mkvirtualenv -p python2.7 test
Running virtualenv with interpreter /usr/bin/python2.7
New python executable in test/bin/python2.7
Also creating executable in test/bin/python
Installing setuptools, pip...done.
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/test/bin/predeactivate
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/test/bin/postdeactivate
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/test/bin/preactivate
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/test/bin/postactivate
virtualenvwrapper.user_scripts creating /home/vagrant/.virtualenvs/test/bin/get_env_details
(test)vagrant@vagrant-ubuntu-trusty-32:~$
```

14) Se ejecuta una impresión por consola de PYTHON para validar que el motor (runtime de ejecución), está trabajando correctamente.

Probar con

**`python -c "import sys; print sys.path"`**



```
Administrator: posh~git ~ Portal [master]
vagrant@vagrant-ubuntu-trusty-32:~$ sudo virtualenv --no-site-packages env --al
ways-copy
New python executable in env/bin/python
Installing setuptools, pip...done.
vagrant@vagrant-ubuntu-trusty-32:~$
```

```
Administrator: posh~git ~ Portal [master]
(test)vagrant@vagrant-ubuntu-trusty-32:~$ python -c "import sys; print sys.path"
['', '/home/vagrant/.virtualenvs/test/lib/python2.7', '/home/vagrant/.virtualenv
s/test/lib/python2.7/plat-i386-linux-gnu', '/home/vagrant/.virtualenvs/test/lib/
python2.7/lib-tk', '/home/vagrant/.virtualenvs/test/lib/python2.7/lib-old', '/ho
me/vagrant/.virtualenvs/test/lib/python2.7/lib-dynload', '/usr/lib/python2.7',
'/usr/lib/python2.7/plat-i386-linux-gnu', '/usr/lib/python2.7/lib-tk', '/home/vag
rant/.virtualenvs/test/local/lib/python2.7/site-packages', '/home/vagrant/.virtu
alenvs/test/lib/python2.7/site-packages']
(test)vagrant@vagrant-ubuntu-trusty-32:~$
```



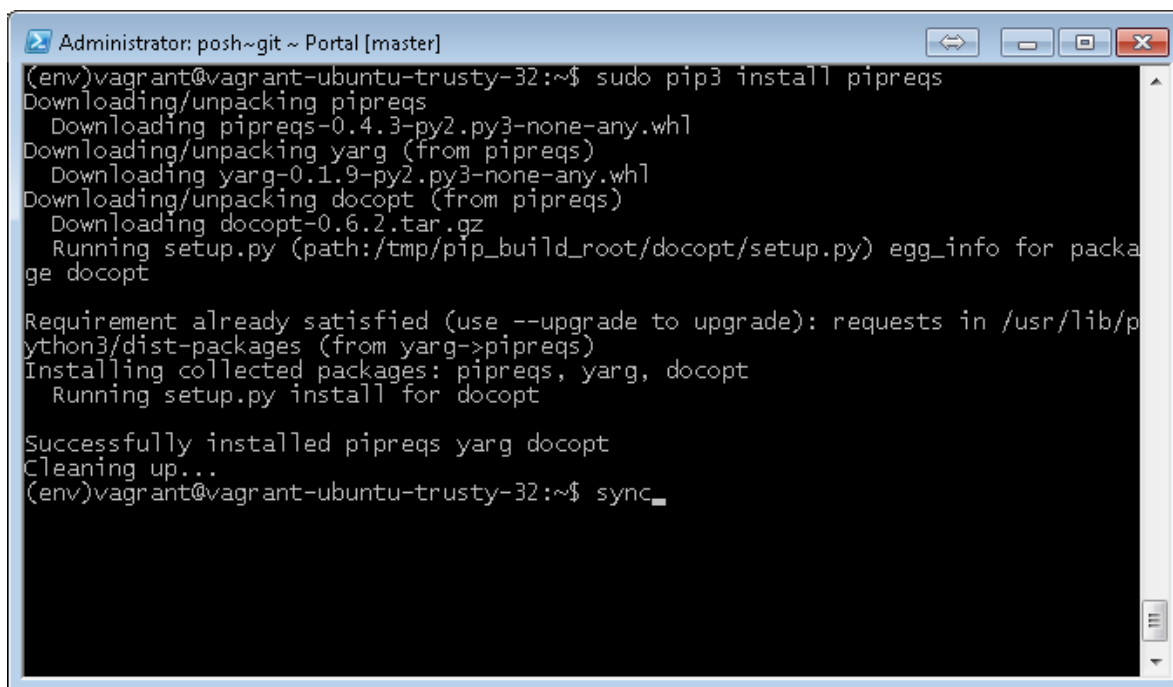


## CONFIGURACIÓN DE LIBRERÍAS DE LÍNEA BASE PARA PYTHON

Como recurso del correcto funcionamiento de PYTHON, requerido para el clúster de apps CNCFLORA, se necesitan instalar las librerías adicionales, para lo cual, deben ejecutarse una vez terminado el montaje de línea base Python en la máquina virtual vagrant, los siguientes comandos y para los siguientes propósitos:

- 1) Realizar el montaje de pipreqs para Python con el comando:

**sudo pip install pipreqs**

A screenshot of a terminal window titled "Administrator: posh~git ~ Portal [master]". The terminal shows the command "sudo pip3 install pipreqs" being executed. The output includes: "Downloading/unpacking pipreqs", "Downloading pipreqs-0.4.3-py2.py3-none-any.whl", "Downloading/unpacking yarg (from pipreqs)", "Downloading yarg-0.1.9-py2.py3-none-any.whl", "Downloading/unpacking docopt (from pipreqs)", "Downloading docopt-0.6.2.tar.gz", "Running setup.py (path:/tmp/pip\_build\_root/docopt/setup.py) egg\_info for package docopt", "Requirement already satisfied (use --upgrade to upgrade): requests in /usr/lib/python3/dist-packages (from yarg->pipreqs)", "Installing collected packages: pipreqs, yarg, docopt", "Running setup.py install for docopt", "Successfully installed pipreqs yarg docopt", "Cleaning up...", and "(env)vagrant@vagrant-ubuntu-trusty-32:~\$ sync\_".

```
Administrator: posh~git ~ Portal [master]
(env)vagrant@vagrant-ubuntu-trusty-32:~$ sudo pip3 install pipreqs
Downloading/unpacking pipreqs
  Downloading pipreqs-0.4.3-py2.py3-none-any.whl
Downloading/unpacking yarg (from pipreqs)
  Downloading yarg-0.1.9-py2.py3-none-any.whl
Downloading/unpacking docopt (from pipreqs)
  Downloading docopt-0.6.2.tar.gz
Running setup.py (path:/tmp/pip_build_root/docopt/setup.py) egg_info for package docopt
Requirement already satisfied (use --upgrade to upgrade): requests in /usr/lib/python3/dist-packages (from yarg->pipreqs)
Installing collected packages: pipreqs, yarg, docopt
Running setup.py install for docopt
Successfully installed pipreqs yarg docopt
Cleaning up...
(env)vagrant@vagrant-ubuntu-trusty-32:~$ sync_
```

- 2) Generar backup de los requerimientos de línea base de instalación con el comando:

**sudo pip freeze > requirements.txt**  
**sudo pip install -r requirements.txt**



```
Administrator: posh~git ~ Portal [master]
(env)vagrant@vagrant-ubuntu-trusty-32:~$ sudo pip3 freeze > requirements.txt
(env)vagrant@vagrant-ubuntu-trusty-32:~$
```

```
Administrator: posh~git ~ Portal [master]
(env)vagrant@vagrant-ubuntu-trusty-32:~$ sudo pip3 freeze > requirements.txt
(env)vagrant@vagrant-ubuntu-trusty-32:~$
```



```
Administrator: posh~git ~ Portal [master]
ntu2 in /usr/lib/python3/dist-packages (from -r requirements.txt (line 11))
Requirement already satisfied (use --upgrade to upgrade): requests==2.2.1 in /usr
r/lib/python3/dist-packages (from -r requirements.txt (line 12))
Requirement already satisfied (use --upgrade to upgrade): six==1.10.0 in ./loca
l/lib/python3.4/site-packages (from -r requirements.txt (line 13))
Requirement already satisfied (use --upgrade to upgrade): stevedore==1.15.0 in .
./local/lib/python3.4/site-packages (from -r requirements.txt (line 14))
Requirement already satisfied (use --upgrade to upgrade): ufw==0.34-rc-0ubuntu2
in /usr/lib/python3/dist-packages (from -r requirements.txt (line 15))
Requirement already satisfied (use --upgrade to upgrade): unattended-upgrades==0
.1 in /usr/lib/python3/dist-packages (from -r requirements.txt (line 16))
Requirement already satisfied (use --upgrade to upgrade): urllib3==1.7.1 in /usr
/lib/python3/dist-packages (from -r requirements.txt (line 17))
Requirement already satisfied (use --upgrade to upgrade): virtualenv==15.0.2 in
./local/lib/python3.4/site-packages (from -r requirements.txt (line 18))
Requirement already satisfied (use --upgrade to upgrade): virtualenv-clone==0.2.
6 in ./local/lib/python3.4/site-packages (from -r requirements.txt (line 19))
Requirement already satisfied (use --upgrade to upgrade): virtualenvwrapper==4.7
.1 in ./local/lib/python3.4/site-packages (from -r requirements.txt (line 20))
Requirement already satisfied (use --upgrade to upgrade): wheel==0.24.0 in /usr/
lib/python3/dist-packages (from -r requirements.txt (line 21))
Requirement already satisfied (use --upgrade to upgrade): yarg==0.1.9 in /usr/lo
cal/lib/python3.4/dist-packages (from -r requirements.txt (line 22))
Cleaning up...
(env)vagrant@vagrant-ubuntu-trusty-32:~$
```

3) Instalar la librería de Flask con el comando

**sudo pip3 install Flask**



```
Administrator: posh~git ~ Portal [master]
'tests'
warning: no previously-included files matching '*.pyo' found under directory
'tests'
warning: no previously-included files matching '*.pyc' found under directory
'examples'
warning: no previously-included files matching '*.pyo' found under directory
'examples'
no previously-included directories found matching 'docs/_build'
Running setup.py install for MarkupSafe

building 'markupsafe._speedups' extension
i686-linux-gnu-gcc -pthread -DNDEBUG -g -fwrapv -O2 -Wall -Wstrict-prototypes
-g -fstack-protector --param=ssp-buffer-size=4 -Wformat -Werror=format-security
-D_FORTIFY_SOURCE=2 -fPIC -I/usr/include/python3.4m -c markupsafe/_speedups.c
-o build/temp.linux-i686-3.4/markupsafe/_speedups.o
i686-linux-gnu-gcc -pthread -shared -Wl,-O1 -Wl,-Bsymbolic-functions -Wl,-Bsymbolic-functions -Wl,-z,relro -Wl,-Bsymbolic-functions -Wl,-z,relro -g -fstack-protector --param=ssp-buffer-size=4 -Wformat -Werror=format-security -D_FORTIFY_SOURCE=2 build/temp.linux-i686-3.4/markupsafe/_speedups.o -o build/lib.linux-i686-3.4/markupsafe/_speedups.cpython-34m.so
Successfully installed Flask itsdangerous Werkzeug Jinja2 click MarkupSafe
Cleaning up...
vagrant@vagrant-ubuntu-trusty-32:/vagrant$ sync
vagrant@vagrant-ubuntu-trusty-32:/vagrant$
vagrant@vagrant-ubuntu-trusty-32:/vagrant$
```

4) Instalar la librería flask (con minúscula) con el comando:

**sudo pip install flask**

5) Instalar posteriormente la librería de correo flask\_marrowmailer, con el comando

**sudo pip install flask\_marrowmailer**



```
Administrator: posh~git ~ Portal [master]
no previously-included directories found matching 'docs/_build'
Running setup.py install for MarkupSafe

building 'markupsafe._speedups' extension
i686-linux-gnu-gcc -pthread -fno-strict-aliasing -DNDEBUG -g -fwrapv -O2 -Wall
-Wstrict-prototypes -fPIC -I/usr/include/python2.7 -c markupsafe/_speedups.c
-o build/temp.linux-i686-2.7/markupsafe/_speedups.o
markupsafe/_speedups.c:12:20: fatal error: Python.h: No such file or directory
ry
#include <Python.h>
^
compilation terminated.
=====
WARNING: The C extension could not be compiled, speedups are not enabled.
Failure information, if any, is above.
Retrying the build without the C extension now.

=====
WARNING: The C extension could not be compiled, speedups are not enabled.
Plain-Python installation succeeded.
=====
Successfully installed flask itsdangerous Werkzeug Jinja2 click MarkupSafe
Cleaning up...
(env)vagrant@vagrant-ubuntu-trusty-32:/vagrant$
```

```
Administrator: posh~git ~ Portal [master]
Downloading/unpacking marrow.mailer (from flask-marrowmailer)
Downloading marrow.mailer-4.0.1-py2.py3-none-any.whl (55kB): 55kB downloaded
Downloading/unpacking futures (from flask-marrowmailer)
Downloading futures-3.0.5-py2-none-any.whl
Downloading/unpacking marrow.util<2.0 (from marrow.mailer->flask-marrowmailer)
Downloading marrow.util-1.2.3.tar.gz
Running setup.py (path:/tmp/pip_build_root/marrow.util/setup.py) egg_info for
package marrow.util

Installing collected packages: flask-marrowmailer, marrow.mailer, futures, marro
w.util
Running setup.py install for flask-marrowmailer
Running setup.py install for marrow.util

Skipping installation of /usr/local/lib/python2.7/dist-packages/marrow/__ini
t__.py (namespace package)
Skipping installation of /usr/local/lib/python2.7/dist-packages/marrow/util/
__init__.py (namespace package)
Installing /usr/local/lib/python2.7/dist-packages/marrow.util-1.2.3-nspkg.pt
h
Successfully installed flask-marrowmailer marrow.mailer futures marrow.util
Cleaning up...
(env)vagrant@vagrant-ubuntu-trusty-32:/vagrant$
```

- 6) Posteriormente se debe instalar la librería netifaces, requerida para la resolución en Python de la dirección local de la máquina (como obtención de la dirección IP del servidor de resolución) y de esta manera, poder configurar rutas de acceso al contexto o configurar hipervínculos de forma dinámica en



código PYTHON/HTML. Se debe proceder con el conjunto de comandos

**sudo apt-get install python-dev**

**sudo pip install netifaces**

## 5. ACTUALIZACIÓN DE APACHE PARA LA CONFIGURACIÓN DEL PROXY DEL SERVIDOR

Con el fin de evitar el error BAD GATEWAY 502, se despliega luego de colocar a correr el clúster de aplicaciones APP NUVEM CNCFLORA, se debe instalar Apache con las siguientes instrucciones:

- a) `sudo apt-get update`
- b) `sudo apt-get install apache2`
- c) `sudo apt-get install libapache2-mod-php5 php5 php5-mcrypt`

Acto seguido, se debe configurar el archivo `apache2.conf`, con la siguiente línea

`ServerName localhost`, tal como se muestra a continuación:

**`/etc/apache2/apache2.conf`**





```
root@labriesgos: /etc/apache2
GNU nano 2.2.6 Archivo: apache2.conf

IncludeOptional conf-enabled/*.conf

# Include the virtual host configurations:
IncludeOptional sites-enabled/*.conf

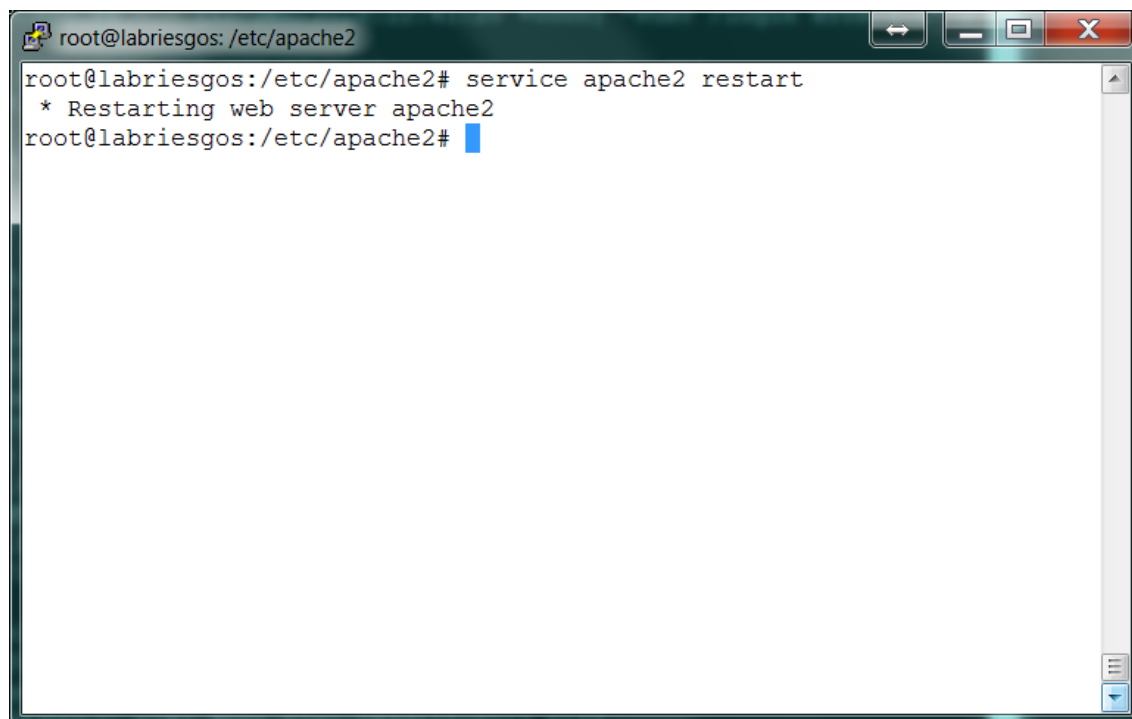
# vim: syntax=apache ts=4 sw=4 sts=4 sr noet
Servername localhost
```

^G Ver ayuda ^O Guardar ^R Leer fich. ^Y Pág. ant. ^K Cortar Texto ^C Posición  
^X Salir ^J Justificar ^W Buscar ^V Pág. sig. ^U PegarTxt ^T Ortografía

Y reiniciar el servicio de apache con

**service apache2 restart**

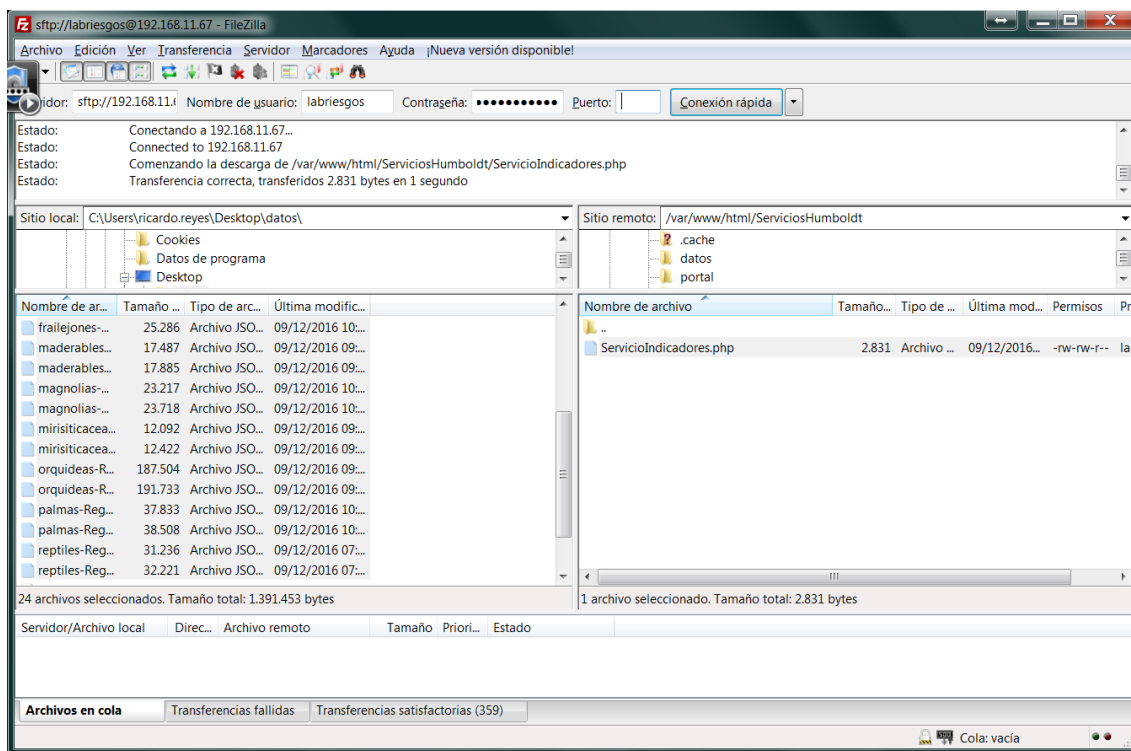


A terminal window with a dark green title bar and standard window controls. The terminal text shows the user 'root' at 'labriesgos' in the directory '/etc/apache2' running the command 'service apache2 restart'. The output shows the service restarting the web server. The prompt returns to 'root@labriesgos:/etc/apache2#'.

```
root@labriesgos:/etc/apache2# service apache2 restart
* Restarting web server apache2
root@labriesgos:/etc/apache2#
```

Posteriormente validar la instalación `/var/www/html` en la raíz del disco y desplegar los Servicios Web PHP desarrollados que hablarán con los handlers Python del App de Portal de CNCFLORA, tal como se ilustra a continuación:

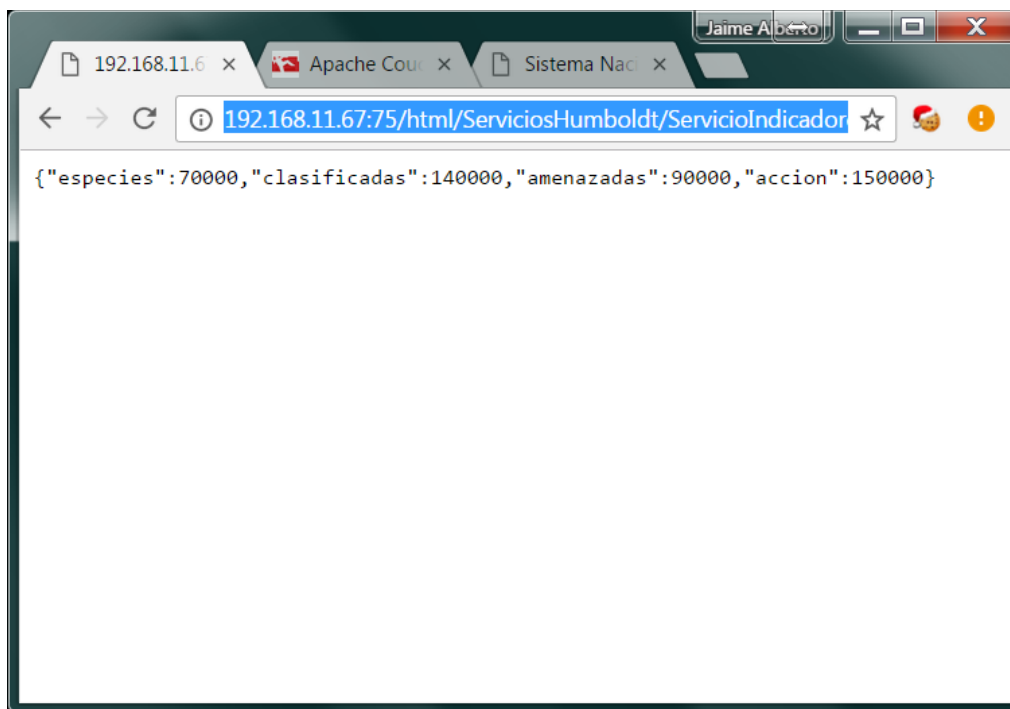




Resolver la URI con

<http://192.168.11.67:75/html/ServiciosHumboldt/ServicioIndicadores.php>





Validar la salida JSON y configurar la URI en el consumo del componente Python como se muestra a continuación:

```
ni.ifaddresses('eth1')
direccionServidor = ni.ifaddresses('eth1')[2][0]['addr']
uriServicio = 'http://' + direccionServidor +
':75/html/ServiciosHumboldt/ServicioIndicadores.php'
resp = requests.get(uriServicio)
if resp.status_code != 200:
    raise ApiError('GET /tasks/ {}'.format(resp.status_code))

datos = json.loads(resp.text)
especies = datos['especies']
clasificadas = datos['clasificadas']
amenazadas = datos['amenazadas']
accion = datos['accion']
#*****
#*****
#*****
return render_template('home.html',base_url=self.base_url,static_
```



## 6. INSTALACIÓN DE DOCKER PARA EL CLÚSTER DE APLICACIONES APP NUVEM CNCFLORA

Para instalar el clúster se deben ejecutar los siguientes comandos en la MV instalada:

- 1) `sudo apt-get update`
- 2) `sudo apt-get install apt-transport-https ca-certificates`
- 3) Montar el repositorio con:

```
sudo apt-key adv --keyserver hkp://pgp.mit.edu:80 --recv-keys  
58118E89F3A912897C070ADB76221572C52609D
```

- 4) Actualizar el archivo del repo con:

```
sudo echo 'deb https://apt.dockerproject.org/repo ubuntu-trusty main' >  
/etc/apt/sources.list.d/docker.list
```

- 5) `sudo apt-get update`
- 6) `sudo apt-get install docker-engine -y`
- 7) `sudo service docker start`
- 8) `sudo curl -L https://github.com/docker/compose/releases/download/1.6.2/docker-compose-`uname -s`-`uname -m` >$sudo chmod +x /usr/local/bin/docker-compose`
- 9) `sudo usermod -aG docker vagrant`



- 10) `sudo apt-get install docker`
- 11) `sudo pip install docker-compose`
- 12) `sudo docker-compose up -d` (Descargar todos los paquetes y esperar que inicien los servicios)
- 13) Una vez se validen que los servicios suben, editar el `docker-compose.yml`, con la siguiente estructura:





version: "2"

services:

proxy:

image: diogok/caddy

restart: "always"

ports:

- 80:80

- 443:443

networks:

- nuvem

volumes:

- ./Caddyfile:/etc/Caddyfile

- ./index.html:/var/www/html/index.html

- /opt/caddy:/root/.caddy

couchdb:

image: cncflora/couchdb

networks:

- nuvem

restart: "always"

ports:

- "5984:5984"

volumes:

- "/var/data/couchdb:/var/lib/couchdb:rw"

elasticsearch:

image: cncflora/elasticsearch



networks:

- nuvem

restart: "always"

ports:

- "9200:9200"

volumes:

- "/var/data/elasticsearch/data:/usr/share/elasticsearch/data:rw"

kibana:

image: cncflora/kibana

networks:

- nuvem

restart: "always"

floradata:

image: cncflora/floradata

networks:

- nuvem

restart: "always"

ports:

- 80

- 9001

aka:

image: cncflora/aka

networks:

- nuvem

restart: "always"



volumes:

- "/var/data/aka:/var/data/aka:rw"

environment:

PROXY: "/aka"

services:

image: cncflora/services

networks:

- nuvem

restart: "always"

environment:

DB: "public"

BASE: "/services"

**#portal:**

**# image: cncflora/portal**

**# networks:**

**# - nuvem**

**# restart: "always"**

**# environment:**

**# BASE: "/portal"**

entrypoint:

image: cncflora/entrypoint

networks:

- nuvem

restart: "always"

connect:



image: cncflora/connect

networks:

- nuvem

restart: "always"

volumes:

- "/var/data/connect:/var/floraconnect:rw"

environment:

PROXY: "/connect"

dwc\_services:

image: cncflora/dwc-services

networks:

- nuvem

restart: "always"

environment:

PROXY: "/dwc\_services"

checklist:

image: cncflora/checklist

networks:

- nuvem

restart: "always"

environment:

BASE: "/checklist"

HOST: "\${HOST}"

occurrences:

image: cncflora/occurrences



networks:

- nuvem

restart: "always"

environment:

BASE: "/occurrences"

HOST: "\${HOST}"

profiles:

image: cncflora/profiles

networks:

- nuvem

restart: "always"

environment:

BASE: "/profiles"

HOST: "\${HOST}"

assessments:

image: cncflora/assessments

networks:

- nuvem

restart: "always"

environment:

BASE: "/assessment"

HOST: "\${HOST}"

migrator:

image: cncflora/migrator

networks:



```
- nuvem

restart: "always"

environment:

  HOST: "${HOST}"

reports2:

  image: cncflora/reports2

  networks:

    - nuvem

    restart: "always"

archivos:

  image: cncflora/apache

  networks:

    - nuvem

    restart: "always"

  volumes:

    - "/var/data/www:/var/www:rw"

archivos-sftp:

  image: asavartzeth/sftp

  networks:

    - nuvem

    restart: "always"

  ports:

    - "2223:22"

  environment:

    SFTP_USER: "cncflora"
```





SFTP\_PASS: "1cncflora2"

volumes:

- "/var/data/www:\$SFTP\_DATA\_DIR/chroot/www:rw"

networks:

nuvem:

Solo comentar la sesión de Portal y arrancar el comando con:

export HOST=IP\_SERVIDOR\_AMBIENTE

ejemplo

export HOST=192.168.11.67, y luego

sudo docker-compose up en la carpeta /vagrant



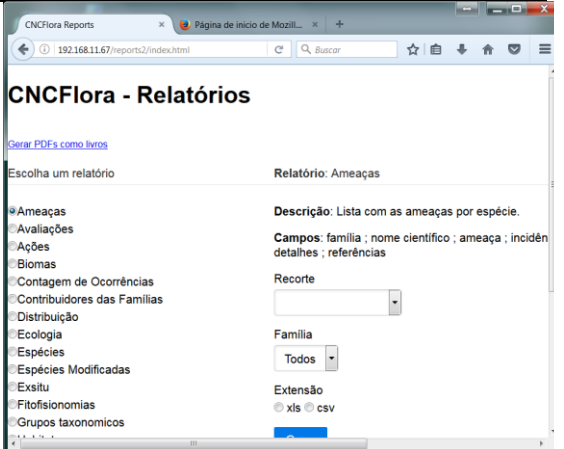
```

root@labriesgos: /nuvem
connect_1 | 2016-12-12 23:38:55.472:INFO:oejs.Server:main: Started @23641ms
kibana_1 | {"@timestamp":"2016-12-12T23:38:58.758Z","level":"info","message":"No existing kibana index found","node_env":"production"}
kibana_1 | {"@timestamp":"2016-12-12T23:38:58.783Z","level":"info","message":"Listening on 0.0.0.0:80","node_env":"production"}
dwc_services_1 | WARNING: update already refers to: #'clojure.core/update in namespace: plumbing.core, being replaced by: #'plumbing.core/update
dwc_services_1 | WARNING: update already refers to: #'clojure.core/update in namespace: dwc-analysis.eoo, being replaced by: #'plumbing.core/update
dwc_services_1 | WARNING: update already refers to: #'clojure.core/update in namespace: plumbing.graph.positional, being replaced by: #'plumbing.core/update
dwc_services_1 | WARNING: update already refers to: #'clojure.core/update in namespace: dwc-analysis.aoo, being replaced by: #'plumbing.core/update
dwc_services_1 | WARNING: update already refers to: #'clojure.core/update in namespace: dwc-analysis.risk, being replaced by: #'plumbing.core/update
dwc_services_1 | WARNING: update already refers to: #'clojure.core/update in namespace: dwc-analysis.clusters, being replaced by: #'plumbing.core/update
dwc_services_1 | WARNING: update already refers to: #'clojure.core/update in namespace: dwc-analysis.quality, being replaced by: #'plumbing.core/update
dwc_services_1 | WARNING: update already refers to: #'clojure.core/update in namespace: dwc-analysis.all, being replaced by: #'plumbing.core/update
dwc_services_1 | 2016-12-12 23:39:06.682:INFO:oejsh.ContextHandler:main: Started o.e.j.w.WebAppContext@6a6824be{/,file:///tmp/jetty-0.0.0-80-dwc-services.war_-any-6691187102579655702.dir/webapp/,AVAILABLE}{file:///root/dwc-services.war}
dwc_services_1 | 2016-12-12 23:39:06.728:INFO:oejs.ServerConnector:main: Started ServerConnector@2b374504{HTTP/1.1,[http/1.1]}{0.0.0.0:80}
dwc_services_1 | 2016-12-12 23:39:06.729:INFO:oejs.Server:main: Started @33299ms

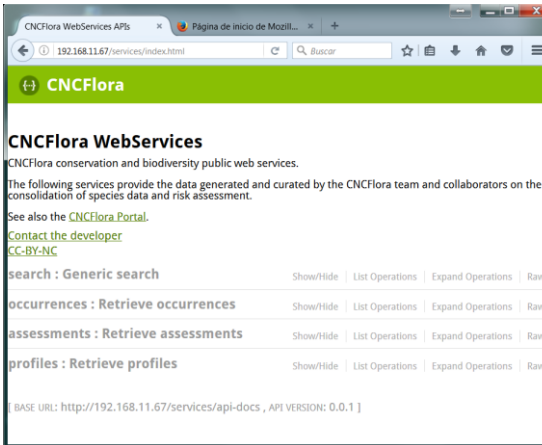
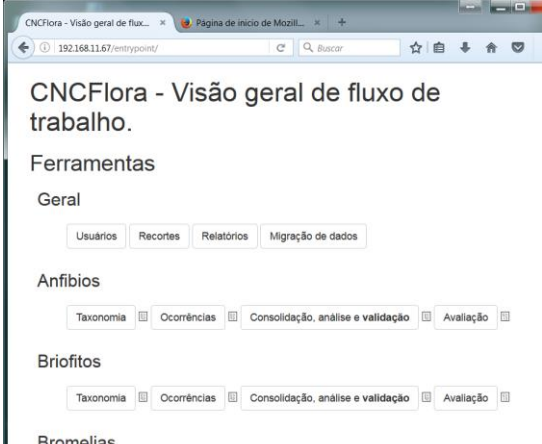
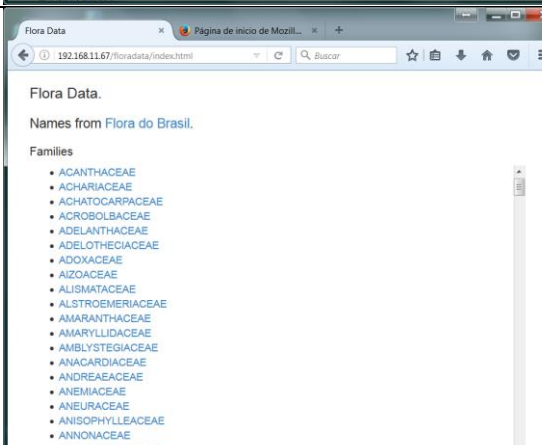
```



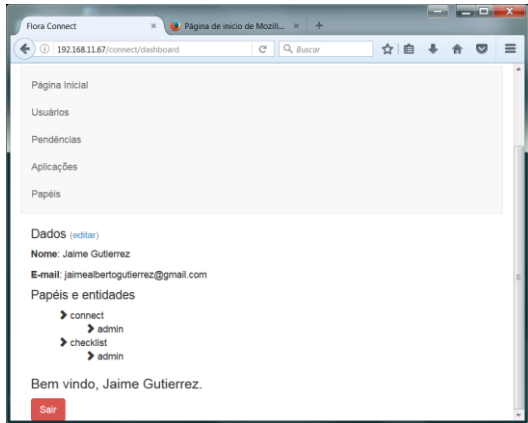
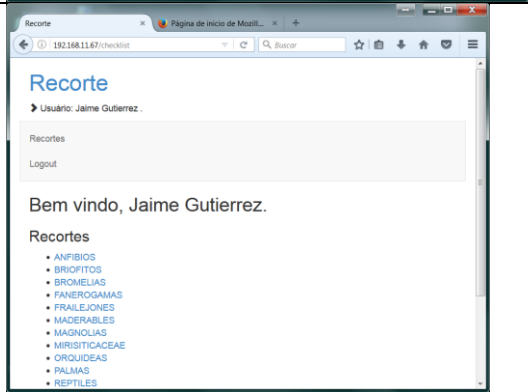
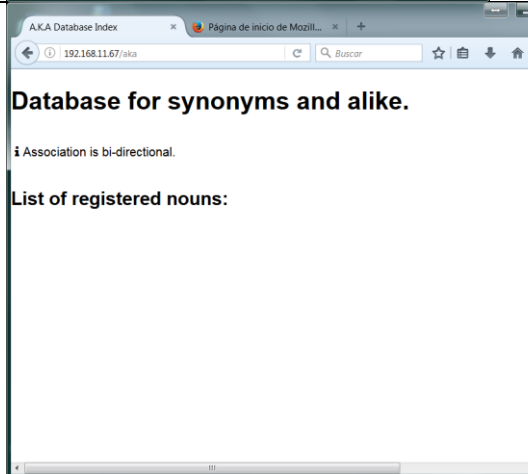
Validar el acceso a aplicaciones cluster, en las siguientes URI:

Aplicación	URI de acceso	APLICACIÓN
Occurrencias	<a href="http://192.168.11.67/occurrences/">http://192.168.11.67/occurrences/</a>	
Assessments	<a href="http://192.168.11.67/assessments">http://192.168.11.67/assessments</a>	
reports	<a href="http://192.168.11.67/reports2/index.html">http://192.168.11.67/reports2/index.html</a>	



Services	<a href="http://192.168.11.67/services/index.html">http://192.168.11.67/services/index.html</a>	 <p>CNCFlora WebServices CNCFlora conservation and biodiversity public web services. The following services provide the data generated and curated by the CNCFlora team and collaborators on the consolidation of species data and risk assessment. See also the <a href="#">CNCFlora Portal</a>. <a href="#">Contact the developer</a> <a href="#">CC-BY-NC</a></p> <p>search : Generic search    Show/Hide    List Operations    Expand Operations    Raw</p> <p>occurrences : Retrieve occurrences    Show/Hide    List Operations    Expand Operations    Raw</p> <p>assessments : Retrieve assessments    Show/Hide    List Operations    Expand Operations    Raw</p> <p>profiles : Retrieve profiles    Show/Hide    List Operations    Expand Operations    Raw</p> <p>[ BASE URL: http://192.168.11.67/services/api-docs , API VERSION: 0.0.1 ]</p>
entrypoint	<a href="http://192.168.11.67/entrypoint/">http://192.168.11.67/entrypoint/</a>	 <p>CNCFlora - Visão geral de fluxo de trabalho.</p> <p>Ferramentas</p> <p>Geral</p> <p>Usuários   Recortes   Relatórios   Migração de dados</p> <p>Anfíbios</p> <p>Taxonomia   Ocorrências   Consolidação, análise e validação   Avaliação</p> <p>Briófitas</p> <p>Taxonomia   Ocorrências   Consolidação, análise e validação   Avaliação</p> <p>Bromélias</p>
floradata	<a href="http://192.168.11.67/floradata/index.html">http://192.168.11.67/floradata/index.html</a>	 <p>Flora Data.</p> <p>Names from Flora do Brasil.</p> <p>Families</p> <ul style="list-style-type: none"> <li>ACANTHACEAE</li> <li>ACHARIACEAE</li> <li>ACHATOCARPACEAE</li> <li>ACROBOLBACEAE</li> <li>ADELANTHACEAE</li> <li>ADELOTHEGACEAE</li> <li>ADOXACEAE</li> <li>AIZOACEAE</li> <li>ALISMACEAE</li> <li>ALSTROEMERACEAE</li> <li>AMARANTHACEAE</li> <li>AMARYLLIDACEAE</li> <li>AMBLYSTEGIACEAE</li> <li>ANACARDIACEAE</li> <li>ANDREAEACEAE</li> <li>ANEMACEAE</li> <li>ANEURACEAE</li> <li>ANISOPHYLLACEAE</li> <li>ANNONACEAE</li> <li>ANOMODONTACEAE</li> </ul>

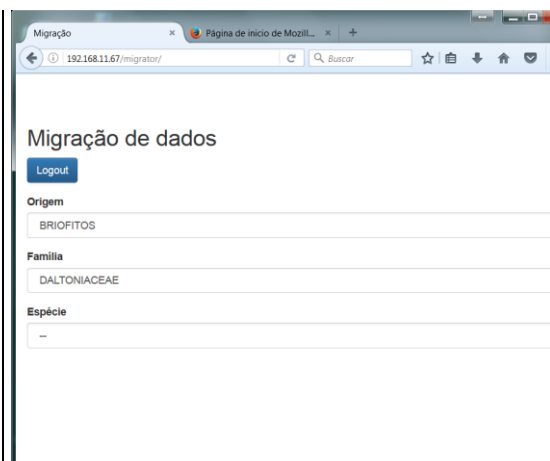


Connect	<a href="http://192.168.11.67/connect/index">http://192.168.11.67/connect/index</a>	 <p>Flora Connect</p> <p>Página Inicial</p> <p>Usuarios</p> <p>Pendientes</p> <p>Aplicaciones</p> <p>Papeles</p> <p>Dados (editar)</p> <p>Nombre: Jaime Gutierrez</p> <p>E-mail: jaimealbertogutierrez@gmail.com</p> <p>Papeles e entidades</p> <ul style="list-style-type: none"> <li>connect</li> <li>admin</li> <li>checklist</li> <li>admin</li> </ul> <p>Bem vindo, Jaime Gutierrez.</p> <p>Salir</p>
checklist	<a href="http://192.168.11.67/checklist">http://192.168.11.67/checklist</a>	 <p>Recorte</p> <p>Usuario: Jaime Gutierrez</p> <p>Recortes</p> <p>Logout</p> <p>Bem vindo, Jaime Gutierrez.</p> <p>Recortes</p> <ul style="list-style-type: none"> <li>ANFIBIOS</li> <li>BRIOFITOS</li> <li>BROMELIAS</li> <li>FANEROGAMAS</li> <li>FRALLEJONES</li> <li>MADERABLES</li> <li>MAGNOLIAS</li> <li>MIRISTICACEAE</li> <li>ORQUIDEAS</li> <li>PALMAS</li> <li>REPTILES</li> </ul>
Aka	<a href="http://192.168.11.67/aka">http://192.168.11.67/aka</a>	 <p>AKA Database Index</p> <p>Database for synonyms and alike.</p> <p>i Association is bi-directional.</p> <p>List of registered nouns:</p>



migrator

<http://192.168.11.67/migrator/>



The screenshot shows a web browser window with the address bar displaying "192.168.11.67/migrator/". The page title is "Migração de dados". Below the title, there is a "Logout" button. The main content area contains three dropdown menus: "Origem" (set to "BRIOFITOS"), "Família" (set to "DALTONIACEAE"), and "Espécie" (set to "--").

## 7. ARRANQUE DEL AMBIENTE DE FRONT END PORTAL NUVEM CNCFLORA

- 1) Ingresar en la consola luego de sesionar a la carpeta /vagrant/portal
- 2) Editar el archivo run.py y establecer la configuración de depuración y la dirección IP del servidor



```
root@labriesgos: /nuvem/portal
GNU nano 2.2.6 Archivo: run.py

view_func=ProjectHandler.as_view('project'))
app.add_url_rule('/<language>/equipe',
    view_func=EquipeHandler.as_view('equipe'))
app.add_url_rule('/<language>/livros',
    view_func=BookHandler.as_view('livros'))

if __name__ == "__main__":
    app.run(port=85, host='192.168.11.67', debug=True)
```

3) Crear el comando arranque.sh, con el siguiente contenido:

```
echo "*****"
echo "*****"
sudo python run.py
echo "*****"
echo "*****"
```

4) Asignar permiso de ejecución al script con

**chmod +777 arranque.sh**

5) Ejecutar y validar el arranque del servidor





```
root@labriesgos: /nuvem/portal
root@labriesgos: /nuvem/portal# ./arranque.sh
*****
*****
* Running on http://192.168.11.67:85/ (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger pin code: 317-587-283
```

## 7) Resolver el Portal en la URI

<http://192.168.11.67:85/>



## Sistema de análisis del riesgo de extinción de fauna y flora silvestre en Colombia

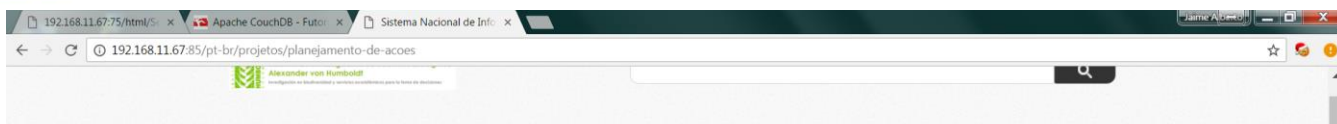
Colombia ha logrado acumular una larga experiencia alrededor de los análisis de riesgo de extinción en múltiples grupos de especies de fauna y flora. Las instituciones que conforman el Comité Nacional de Categorización de Especies Amenazadas que ayudaron a impulsar y generar las primeras ediciones de los libros rojos han consolidado importantes procesos en la evaluación de riesgo de extinción de especies en el país. Pese a esto, Colombia enfrenta ahora nuevos retos que consoliden procesos con mayor impacto, periodicidad y con una mayor cobertura taxonómica, es decir, que incorpore diferentes grupos de especies.

El sistema de análisis de riesgo de extinción incluye no solo aspectos de coordinación de procesos de evaluación de especies a través de las diferentes redes sino que además, presenta una plataforma técnica que integra y articula las herramientas disponibles para la evaluación de riesgo de extinción de especies.



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## PLANES NACIONALES DE CONSERVACIÓN



Los planes de acción para la conservación de especies y ecosistemas, son herramientas indispensables en la conservación de la biodiversidad. Para formular un plan de acción para la conservación se definen prioridades de conservación, también plantea lineamientos sobre las acciones que son críticas para lograr las metas de conservación y hacer monitoreo del progreso hacia las metas para ajustar las prácticas adecuadamente. Un plan de acción para la conservación es una "hoja de ruta" para dirigir nuestros esfuerzos y organizar la gestión para lograr resultados adecuados.

En estos documentos se cuenta con fases diagnósticas, lo cual es un conjunto de experiencias aprendidas y se plantea un plan de acción que refleja los desafíos que se deben adelantar en conservación in situ, ex situ, educación y uso sostenible entre otros. Cabe anotar que los desafíos más que por sectores se abordan en todos los documentos, desde el punto específico de los motores de pérdida de biodiversidad planteados en la política de biodiversidad que se hace desde un abordaje sectorial.

De igual forma, la manera como se identifican y designan áreas y ecosistemas para la conservación o para llevar a cabo procesos que contribuyan al mantenimiento de la biodiversidad ha cambiado. Hoy en día hay gran desarrollo conceptual, metodológico y tecnológico, que permite la planificación sistemática de las iniciativas de conservación y de esta manera potenciar los efectos de las actividades planteadas. Al planificar la conservación, partiendo de la mirada territorial inicial, se ubican los

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