



implementación de servicio web



nginx vhost python gunicorn postgresql



situación problemática

Una empresa de webhosting le solicita a usted y su equipo que realice una implementación de servicio web utilizando nginx configurado para utilizar virtual host con soporte Python y motor para base de datos (nginx+vhost+python+gunicorn+postgresql). Para ofrecer el soporte a sus potenciales clientes.

Primeros pasos a realizar

```
root@debian:~# sudo apt-get update
Des:1 http://security.debian.org/debian-security bullseye-security InRelease [44,1 kB]
Obj:2 http://deb.debian.org/debian bullseye InRelease
Des:3 http://deb.debian.org/debian bullseye-updates InRelease [39,4 kB]
Descargados 83,5 kB en 4s (22,8 kB/s)
Leyendo lista de paquetes... 23%
```

Actualizar sistema

```
root@debian:~# sudo apt-get upgrade
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
Calculando la actualización... Hecho
0 actualizados, 0 nuevos se instalarán, 0 para eliminar y 0 no actualizados.
root@debian:~# █
```

Instalación de paquetes

```
root@debian:~# sudo apt-get install python3-pip python3-dev libpq-dev postgresql postgresql-contrib  
nginx curl
```

Se instalarán los siguientes paquetes adicionales:

```
binutils binutils-common binutils-x86-64-linux-gnu build-essential cpp cpp-10 dirmngr dpkg-dev
fakeroot g++ g++-10 gcc gcc-10 gnupg gnupg-l10n gnupg-utils gpg gpg-agent gpg-wks-client
gpg-wks-server gpgconf gpgsm javascript-common libalgorithm-diff-perl libalgorithm-diff-xs-perl
libalgorithm-merge-perl libasan6 libassuan0 libatomic1 libbinutils libc-dev-bin libc-devtools
libc6-dev libcc1-0 libcrypt-dev libctf-nobfd0 libctf0 libdpkg-perl libexpat1-dev libfakeroot
libfile-fcntllock-perl libgcc-10-dev libgomp1 libisl23 libitm1 libjs-jquery libjs-sphinxdoc
libjs-underscore libksba8 libl1vm1 liblsan0 libmpc3 libmpfr6 libnpt0 libnsl-dev libpq5
libpython3-dev libpython3.9 libpython3.9-dev libquadmath0 libsensors-config libsensors5
libstdc++-10-dev libtirpc-dev libtsan0 libubsan1 libz3-4 linux-libc-dev make manpages-dev
pinentry-curses postgresql-13 postgresql-client-13 postgresql-client-common postgresql-common
python-pip-whl python3-distutils python3-lib2to3 python3-setuptools python3-wheel python3.9-dev
ssl-cert sysstat zlib1g-dev
```

Paquetes sugeridos:

```
binutils-doc cpp-doc gcc-10-locales dbus-user-session pinentry-gnome3 tor debian-keyring
g++-multilib g++-10-multilib gcc-10-doc gcc-multilib autoconf automake libtool flex bison gdb
gcc-doc gcc-10-multilib parcimonie xloadimage sddm glibc-doc bzip2 postgresql-doc-13
lm-sensors libstdc++-10-doc make-doc pinentry-doc postgresql-doc libjson-perl
python-setuptools-doc isag
```

Se instalarán los siguientes paquetes NUEVOS:

```
binutils binutils-common binutils-x86-64-linux-gnu build-essential cpp cpp-10 dirmngr dpkg-dev
fakeroot g++ g++-10 gcc gcc-10 gnupg gnupg-l10n gnupg-utils gpg gpg-agent gpg-wks-client
gpg-wks-server gpgconf gpgsm javascript-common libalgorithm-diff-perl libalgorithm-diff-xs-perl
libalgorithm-merge-perl libasan6 libassuan0 libatomic1 libbinutils libc-dev-bin libc-devtools
libc6-dev libcc1-0 libcrypt-dev libctf-nobfd0 libctf0 libdpkg-perl libexpat1-dev libfakeroot
libfile-fcntllock-perl libgcc-10-dev libgomp1 libisl23 libitm1 libjs-jquery libjs-sphinxdoc
libjs-underscore libksba8 libl1vm1 liblsan0 libmpc3 libmpfr6 libnpt0 libnsl-dev libpq-dev
libpq5 libpython3-dev libpython3.9 libpython3.9-dev libquadmath0 libsensors-config libsensors5
libstdc++-10-dev libtirpc-dev libtsan0 libubsan1 libz3-4 linux-libc-dev make manpages-dev
pinentry-curses postgresql postgresql-13 postgresql-client-13 postgresql-client-common
postgresql-common postgresql-contrib python-pip-whl python3-dev python3-distutils
python3-lib2to3 python3-pip python3-setuptools python3-wheel python3.9-dev ssl-cert sysstat
zlib1g-dev
```

0 actualizados, 89 nuevos se instalarán, 0 para eliminar y 0 no actualizados.

Se necesita descargar 125 MB de archivos.

Se utilizarán 451 MB de espacio de disco adicional después de esta operación.

¿Desea continuar? [S/n] s

ingresamos al usuario por defecto de postgres

```
root@debian:~# sudo -u postgres psql
```

```
postgres=# CREATE DATABASE myapp;  
CREATE DATABASE  
postgres=# CREATE USER myappuser WITH PASSWORD '12QW12QW';
```

Creación de base de datos y un usuario administrador de la misma con parametros

```
postgres=# CREATE DATABASE myapp;
CREATE DATABASE
postgres=# CREATE USER myappuser WITH PASSWORD '12QW12QW';
CREATE ROLE
postgres=#
postgres=# ALTER ROLE myappuser SET client_encoding TO 'utf8';
ALTER ROLE
postgres=# ALTER ROLE myappuser SET default_transaction_isolation TO 'read committed';
ALTER ROLE
postgres=# ALTER ROLE myappuser SET timezone TO 'utc';
ALTER ROLE
postgres=# GRANT ALL PRIVILEGES ON DAATABASE myapp TO myappuser;
ERROR:  error de sintaxis en o cerca de «myapp»
LÍNEA 1: GRANT ALL PRIVILEGES ON DAATABASE myapp TO myappuser;
                                           ^

postgres=# GRANT ALL PRIVILEGES ON DATABASE myapp TO myappuser;
GRANT
postgres=# \q
root@debian:~#
```


Entorno Virtual en python

```
root@debian:~# sudo -H pip3 install --upgrade pip
```

```
root@debian:~# sudo -H pip3 install --upgrade pip
Requirement already satisfied: pip in /usr/lib/python3/dist-packages (20.3.4)
Collecting pip
  Downloading pip-21.3.1-py3-none-any.whl (1.7 MB)
    |████████████████████████████████████████| 1.7 MB 827 kB/s
Installing collected packages: pip
  Attempting uninstall: pip
    Found existing installation: pip 20.3.4
    Not uninstalling pip at /usr/lib/python3/dist-packages, outside environment /usr
    Can't uninstall 'pip'. No files were found to uninstall.
Successfully installed pip-21.3.1
root@debian:~# █
```

```
root@debian:~# sudo -H pip3 install virtualenv
Collecting virtualenv
  Downloading virtualenv-20.10.0-py2.py3-none-any.whl (5.6 MB)
    |████████████████████| 5.6 MB 4.6 MB/s
Collecting platformdirs<3,>=2
  Downloading platformdirs-2.4.0-py3-none-any.whl (14 kB)
Requirement already satisfied: six<2,>=1.9.0 in /usr/lib/python3/dist-packages (from virtualenv==20.10.0)
Collecting distlib<1,>=0.3.1
  Downloading distlib-0.3.3-py2.py3-none-any.whl (496 kB)
    |████████████████████| 496 kB 3.9 MB/s
Collecting backports.entry-points-selectable>=1.0.4
  Downloading backports.entry_points_selectable-1.1.1-py2.py3-none-any.whl (6.2 kB)
Collecting filelock<4,>=3.2
  Downloading filelock-3.4.0-py3-none-any.whl (9.8 kB)
Installing collected packages: platformdirs, filelock, distlib, backports.entry-points-selectable, virtualenv
Successfully installed backports.entry-points-selectable-1.1.1 distlib-0.3.3 filelock-3.4.0 platformdirs-2.4.0 virtualenv-20.10.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pypa.io/warnings/venv
root@debian:~#
```

```
root@debian:~# ls-a
bash: ls-a: orden no encontrada
root@debian:~# apt-get ls-a
E: Operación inválida: ls-a
root@debian:~# ls -a
.  ..  .bash_history  .bashrc  .cache  .local  .profile  .wget-hsts
root@debian:~#
root@debian:~#
root@debian:~#
root@debian:~#
root@debian:~# ls -a
.  ..  .bash_history  .bashrc  .cache  .local  .profile  .wget-hsts
root@debian:~# ls -
ls: no se puede acceder a '-': No existe el fichero o el directorio
root@debian:~# ls -a
.  ..  .bash_history  .bashrc  .cache  .local  .profile  .wget-hsts
root@debian:~# cd
root@debian:~# dc
bash: dc: orden no encontrada
root@debian:~# mkdir /myappdir
root@debian:~# cd /myappdir
root@debian:/myappdir# virtualenv myappenv
created virtual environment CPython3.9.2.final.0-64 in 10511ms
  creator CPython3Posix(dest=/myappdir/myappenv, clear=False, no_vcs_ignore=False, global=False)
  seeder FromAppData(download=False, pip=bundle, setuptools=bundle, wheel=bundle, via=copy, app_data_dir=/root/.local/share/virtualenv)
    added seed packages: pip==21.3.1, setuptools==58.3.0, wheel==0.37.0
  activators BashActivator,CShellActivator,FishActivator,NushellActivator,PowerShellActivator,Python
Activator
root@debian:/myappdir#
```


Activamos entorno virtual

```
created virtual environment CPython3.9.2.final.0-64 in 10511ms
creator CPython3Posix(dest=/myappdir/myappenv, clear=False, no_vcs_ignore=False, global=False)
seeder FromAppData(download=False, pip=bundle, setuptools=bundle, wheel=bundle, via=copy, app_data_dir=/root/.local/share/virtualenv)
added seed packages: pip==21.3.1, setuptools==58.3.0, wheel==0.37.0
activators BashActivator,CShellActivator,FishActivator,NushellActivator,PowerShellActivator,Python
Activator
root@debian:/myappdir# source myappenv/bin/activate
(myappenv) root@debian:/myappdir#
```

Instalar requisitos de Python

```
pip install django gunicorn psycopg2-binary
```

Crea una aplicación Django

```
django-admin.py startproject myapp ~/myappdir
```

Cambiamos la configuración entrando a nano

```
nano ~/myappdir/myapp/settings.py
```



```
"""
Django settings for myapp project.
```

```
Generated by 'django-admin startproject' using Django 3.2.9.
```

```
For more information on this file, see
```

```
https://docs.djangoproject.com/en/3.2/topics/settings/
```

```
For the full list of settings and their values, see
```

```
https://docs.djangoproject.com/en/3.2/ref/settings/
"""
```

```
from pathlib import Path
```

```
# Build paths inside the project like this: BASE_DIR / 'subdir'.
```

```
BASE_DIR = Path(__file__).resolve().parent.parent
```

```
# Quick-start development settings - unsuitable for production
```

```
# See https://docs.djangoproject.com/en/3.2/howto/deployment/checklist/
```

```
# SECURITY WARNING: keep the secret key used in production secret!
```

```
SECRET_KEY = 'django-insecure-z^5c$d@cz8*adpxbpfc7ta86mx4*w-o6=f+lbfdrlu93k3mt6i'
```

```
# SECURITY WARNING: don't run with debug turned on in production!
```

```
DEBUG = True
```

```
ALLOWED_HOSTS = ['ejemplo.com', '201.0.134.5']
```

```
# Application definition
```

```
INSTALLED_APPS = [
```


Cambiamos la configuración con la base de datos de postgresQL

```
# Database
# https://docs.djangoproject.com/en/3.2/ref/settings/#databases

DATABASES = {
    'default': {
        'ENGINE': 'django.db.backends.postgresql_psycopg2',
        'NAME': 'myapp',
        'USER': 'myappuser',
        'PASSWORD': '12qw12qw',
        'HOST': 'localhost',
        'PORT': '',
    }
}
```

```
# Internationalization
# https://docs.djangoproject.com/en/3.2/topics/i18n/

LANGUAGE_CODE = 'en-us'

TIME_ZONE = 'UTC'

USE_I18N = True

USE_L10N = True

USE_TZ = True


# Static files (CSS, JavaScript, Images)
# https://docs.djangoproject.com/en/3.2/howto/static-files/

STATIC_URL = '/static/'
STATIC_ROOT = os.path.join(BASE_DIR, 'static/')

# Default primary key field type
# https://docs.djangoproject.com/en/3.2/ref/settings/#default-auto-field

DEFAULT_AUTO_FIELD = 'django.db.models.BigAutoField'
```

—

 Ayuda	 Guardar	 Buscar	 Cortar	 Ejecutar	 Ubicación	 Deshacer
 Salir	 Leer fich.	 Reemplazar	 Pegar	 Justificar	 Ir a línea	 Rehacer

```
(myappenv) root@debian:/myappdir# /myappdir/manage.py makemigration
Traceback (most recent call last):
  File "/myappdir/manage.py", line 22, in <module>
    main()
  File "/myappdir/manage.py", line 18, in main
    execute_from_command_line(sys.argv)
  File "/myappdir/myappenv/lib/python3.9/site-packages/django/core/management/__init__.py", line 119, in execute_from_command_line
    utility.execute()
  File "/myappdir/myappenv/lib/python3.9/site-packages/django/core/management/__init__.py", line 124, in execute
    settings.INSTALLED_APPS
  File "/myappdir/myappenv/lib/python3.9/site-packages/django/conf/__init__.py", line 82, in __tr__
    self._setup(name)
  File "/myappdir/myappenv/lib/python3.9/site-packages/django/conf/__init__.py", line 69, in _
    self._wrapped = Settings(settings_module)
  File "/myappdir/myappenv/lib/python3.9/site-packages/django/conf/__init__.py", line 170, in _
    mod = importlib.import_module(self.SETTINGS_MODULE)
  File "/usr/lib/python3.9/importlib/__init__.py", line 127, in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
  File "<frozen importlib._bootstrap>", line 1030, in _gcd_import
  File "<frozen importlib._bootstrap>", line 1007, in _find_and_load
  File "<frozen importlib._bootstrap>", line 986, in _find_and_load_unlocked
  File "<frozen importlib._bootstrap>", line 680, in _load_unlocked
  File "<frozen importlib._bootstrap_external>", line 790, in exec_module
  File "<frozen importlib._bootstrap>", line 228, in _call_with_frames_removed
  File "/myappdir/myapp/settings.py", line 125, in <module>
    STATIC_ROOT = os.path.join(BASE_DIR, 'static/')
NameError: name 'os' is not defined
(myappenv) root@debian:/myappdir# /myappdir/manage.py migrate_
```

Crear administrador para nuevo proyecto

`~/myappdir/manage.py createsuperuser`

mover todos los archivo a la carpeta statica

`~/myappdir/manage.py collectstatic`

crear los socket y archivos gunicorn

```
sudo nano /etc/systemd/system/gunicorn.socket
```

Insertamos las siguientes lineas de codigo

```
GNU nano 5.4 /etc/systemd/systemgunicorn.socket
[Unit]
Description=gunicorn socket

[Socket]
ListenStream=/run/gunicorn.sock

[Install]
WantedBy=sockets.target
```

nuevamente entramos a nano

```
sudo nano /etc/systemd/system/gunicorn.service
```

[Unit]

Description=gunicorn daemon

Requires=gunicorn.socket

After=network.target

[Service]

User=TUO_UTENTE

Group=www-data

WorkingDirectory=/home/TUO_UTENTE/myappdir

ExecStart=/home/TUO_UTENTE/myappdir//myappenv/bin/gunicorn \

--access-logfile - \

--workers 3 \

--bind unix:/run/gunicorn.sock \

myapp.wsgi:application

[Install]

WantedBy=multi-user.target

Configurar Nginx

```
sudo nano /etc/nginx/sites-available/myapp
```

```
server{
  listen 80;
  server_name DOMINIO_OPPURE_IP;

  location = /favicon.ico {access_log off; log_not_found off;}
  location /static/{
    root /home/TUO_UTENTE/myappdir;
  }

  location /{
    include proxy_params;
    proxy_pass http://unix/run/gunicorn.sock;
  }
}
```

Habilitando el bloque de servidor recién creado

```
sudo ln -s /etc/nginx/sites-available/myapp /etc/nginx/sites-enabled
```

Verifique las configuraciones de nginx:

```
sudo nginx -t
```

Si no hay errores, reinicie nginx:

```
sudo systemctl restart nginx
```

links

- <https://help.clouding.io/hc/es/articles/360011501139-Configurar-Django-con-Postgres-Nginx-y-Gunicorn-en-Ubuntu-16-04>
- <https://programmerclick.com/article/72961454695/>
- <https://morioh.com/p/fb87277088ac>
- <https://www.apsl.net/blog/2020/04/30/configuracion-server-django-con-nginx-gunicorn-y-postgresql/>
- <https://noviello.it/es/como-instalar-django-con-postgres-nginx-y-gunicorn-en-ubuntu-18-04/>
-