



facultade de
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FACULTADE DE INFORMÁTICA

**Práctica de AISI.
Clústering y Docker
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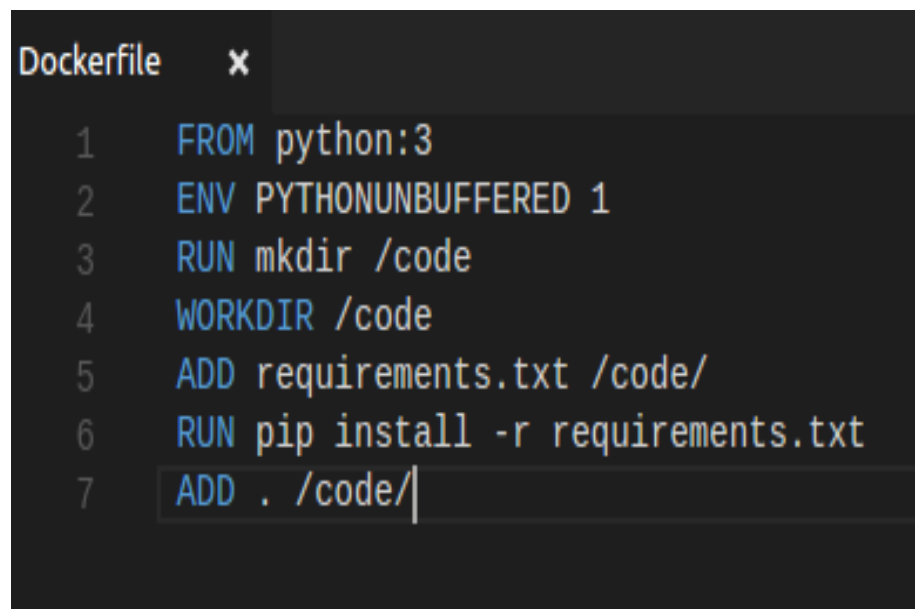
Capítulo 1

Proyecto personal con Docker

A intención e crear un contenedor donde se ejecute un proyecto personal dunha páxina desenvolada con django.

Para empezar temos que crear un Dockerfile, un arquivo coas dependencias de Python e un arquivo docker-compose.yml

O arquivo do Dockerfile terá a seguinte configuración:



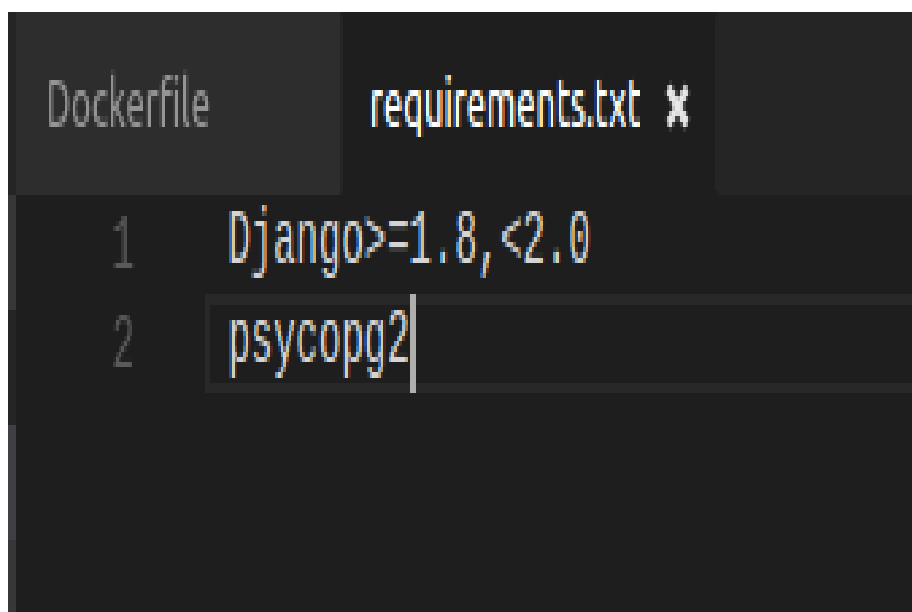
```
Dockerfile  x
1  FROM python:3
2  ENV PYTHONUNBUFFERED 1
3  RUN mkdir /code
4  WORKDIR /code
5  ADD requirements.txt /code/
6  RUN pip install -r requirements.txt
7  ADD . /code/
```

Figura 1.1: Dockerfile



As dependencias de Python a instalar inclúranse nun ficheiro chamado requirements.txt, este arquivo executarase co comando RUN pip install -r requirements.txt que se encontra no Dockerfile.

O arquivo requirements.txt será o seguinte:



```
Dockerfile requirements.txt X
1 Django>=1.8,<2.0
2 psycopg2
```

Figura 1.2: requirements.txt

A continuación crease o contenedor, utilízase a seguinte orde:
docker build -t proyectopagina .



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```
pablito@pablitoBar:~/uni/aisi/practica4/dockerpersonal$ docker build -t proyectopagina .
Sending build context to Docker daemon  51.2kB
Step 1/7 : FROM python:3
3: Pulling from library/python
cd0a524342ef: Already exists
e39c3ffe4133: Already exists
85334a7c2001: Already exists
4c546d9d6a84: Already exists
a2eb12d55dae: Already exists
c315b5d973a6: Pull complete
7ada7ee91ec1: Pull complete
1954cbaa0cd4: Pull complete
Digest: sha256:ff4ead5fb37ce95c8468e1ca728a29e9db607cd19f1226d555fcl1a0d38cd38ea
Status: Downloaded newer image for python:3
--> 21289e3715bd
Step 2/7 : ENV PYTHONUNBUFFERED 1
--> Running in b5e8203a04a6
--> 07f9e6af10
Removing intermediate container b5e8203a04a6
Step 3/7 : RUN mkdir /code
--> Running in 6ae126730d3c
--> 1d2b4bfc4f08
Removing intermediate container 6ae126730d3c
Step 4/7 : WORKDIR /code
--> 337b9d1b6b70
Removing intermediate container fe9ba7f47ca5
Step 5/7 : ADD requirements.txt /code/
--> 64cc9a89552e
Removing intermediate container 84b9e50d9665
Step 6/7 : RUN pip install -r requirements.txt
--> Running in 20cc9f52c418
Collecting Django<2.0,>=1.8 (from -r requirements.txt (line 1))
  Downloading Django-1.11.1-py2.py3-none-any.whl (6.9MB)
Collecting psycopg2 (from -r requirements.txt (line 2))
  Downloading psycopg2-2.7.1-cp36-cp36m-manylinux1 x86_64.whl (2.7MB)
Collecting pytz (from Django<2.0,>=1.8->-r requirements.txt (line 1))
  Downloading pytz-2017.2-py2.py3-none-any.whl (484kB)
Installing collected packages: pytz, Django, psycopg2
Successfully installed Django-1.11.1 psycopg2-2.7.1 pytz-2017.2
--> 396ca95a5439
Removing intermediate container 20cc9f52c418
Step 7/7 : ADD . /code/
--> 5ea67473bf70
Removing intermediate container b39781b12ee7
Successfully built 5ea67473bf70
```

Figura 1.3: requirements.txt

Tamen crearse o docker-compose.yml, a configuración será a siguiente:

```
Dockerfile  requirements.txt  docker-compose.yml x
1  version: '2'
2  services:
3    web:
4      build: .
5      command: python3 manage.py runserver 0.0.0.0:8000
6      volumes:
7        - ./code
8      ports:
9        - "8000:8000"
```

Figura 1.4: docker-compose.yml



Configurase un servicio web.

A continuación copíase os arquivos do proxecto no directorio. Modifícase un arquivo do proxecto chamando settings.py e añádese a seguinte liña `ALLOWED_HOSTS = []`

Para rematar executase o comando `docker-compose up`, esto prodúce o seguinte resultado.

```
pablito@pablitoBar:~/uni/aisi/practica4/dockerpersonal$ docker-compose up
Creating dockerpersonal_web_1
Attaching to dockerpersonal_web_1
web_1 | Performing system checks...
web_1 |
web_1 | System check identified no issues (0 silenced).
web_1 | May 07, 2017 - 13:20:16
web_1 | Django version 1.11.1, using settings 'corcu.settings'
web_1 | Starting development server at http://0.0.0.0:8000/
web_1 | Quit the server with CONTROL-C.
web_1 | Not Found: /
web_1 | [07/May/2017 13:20:22] "GET / HTTP/1.1" 404 2130
web_1 | [07/May/2017 13:20:28] "GET /pagina HTTP/1.1" 301 0
web_1 | [07/May/2017 13:20:28] "GET /pagina/ HTTP/1.1" 200 3341
web_1 | [07/May/2017 13:20:28] "GET /static/css/index.css HTTP/1.1" 200 1244
web_1 | [07/May/2017 13:20:28] "GET /static/css/pestanas.css HTTP/1.1" 200 1029
web_1 | [07/May/2017 13:20:28] "GET /static/pagina/escudo.png HTTP/1.1" 200 32195
web_1 | [07/May/2017 13:20:28] "GET /static/pagina/noticias/CF8C9F2_185056.jpg HTTP/1.1" 200 85460
web_1 | [07/May/2017 13:20:28] "GET /static/pagina/simbolos/Twitter-logo2.png HTTP/1.1" 200 6480
web_1 | [07/May/2017 13:20:28] "GET /static/pagina/simbolos/face.png HTTP/1.1" 200 34462
web_1 | [07/May/2017 13:20:28] "GET /static/pagina/simbolos/insta.png HTTP/1.1" 200 190110
web_1 | [07/May/2017 13:20:28] "GET /static/pagina/simbolos/youtube.png HTTP/1.1" 200 79354
web_1 | [07/May/2017 13:20:28] "GET /static/pagina/simbolos/joma.png HTTP/1.1" 200 34628
web_1 | [07/May/2017 13:20:28] "GET /static/pagina/simbolos/estrella.jpg HTTP/1.1" 200 25330
web_1 | [07/May/2017 13:20:28] "GET /static/pagina/simbolos/europa.jpg HTTP/1.1" 200 169571
web_1 | [07/May/2017 13:20:28] "GET /static/pagina/simbolos/aydocorcu.png HTTP/1.1" 200 156364
web_1 | [07/May/2017 13:20:28] "GET /static/pagina/noticias/Corme-Corrubion-Foto-Ein-Lema.jpg HTTP/1.1" 200 107298
```

Figura 1.5: docker-compose up

Para comprobar que todo funciona correctamente abrimos outra pestaña no terminal e consultamos o contenedor creado con `docker inspect 1537f6e1d8b9`. Obtemos da información mostrada a dirección ip do contenedor no noso caso será a 172.20.0.2.



```
    },
    "NetworkSettings": {
      "Bridge": "",
      "SandboxID": "38f6288b7eee35d4fb508a41de4e6f3f974cad47f67b97930f90da9210",
      "HairpinMode": false,
      "LinkLocalIPv6Address": "",
      "LinkLocalIPv6PrefixLen": 0,
      "Ports": {},
      "SandboxKey": "/var/run/docker/netns/38f6288b7eee",
      "SecondaryIPAddresses": null,
      "SecondaryIPv6Addresses": null,
      "EndpointID": "",
      "Gateway": "",
      "GlobalIPv6Address": "",
      "GlobalIPv6PrefixLen": 0,
      "IPAddress": "",
      "IPPrefixLen": 0,
      "IPv6Gateway": "",
      "MacAddress": "",
      "Networks": {
        "dockerpersonal default": {
          "IPAMConfig": null,
          "Links": null,
          "Aliases": [
            "1537f6e1d8b9"
          ],
          "NetworkID": "157ab3cd1626df70a941750740102ec6842d80db4707098cf1",
          "EndpointID": "dd74abc1d618f5ad6417a0d99414ab09e1e8998423c667c86",
          "Gateway": "172.20.0.1",
          "IPAddress": "172.20.0.2",
          "IPPrefixLen": 16,
          "IPv6Gateway": "",
          "GlobalIPv6Address": "",
          "GlobalIPv6PrefixLen": 0,
          "MacAddress": "02:42:ac:14:00:02"
        }
      }
    }
  }
}
pablito@pablitoBar:~/uni/aisi/practica4/dockerpersonal$
pablito@pablitoBar:~/uni/aisi/practica4/dockerpersonal$
pablito@pablitoBar:~/uni/aisi/practica4/dockerpersonal$ docker inspect 1537f6e1d8b9
```

Figura 1.6: ip

Se nun navegador consultamos esta ip cp porto 8000 obtemos o seguinte:

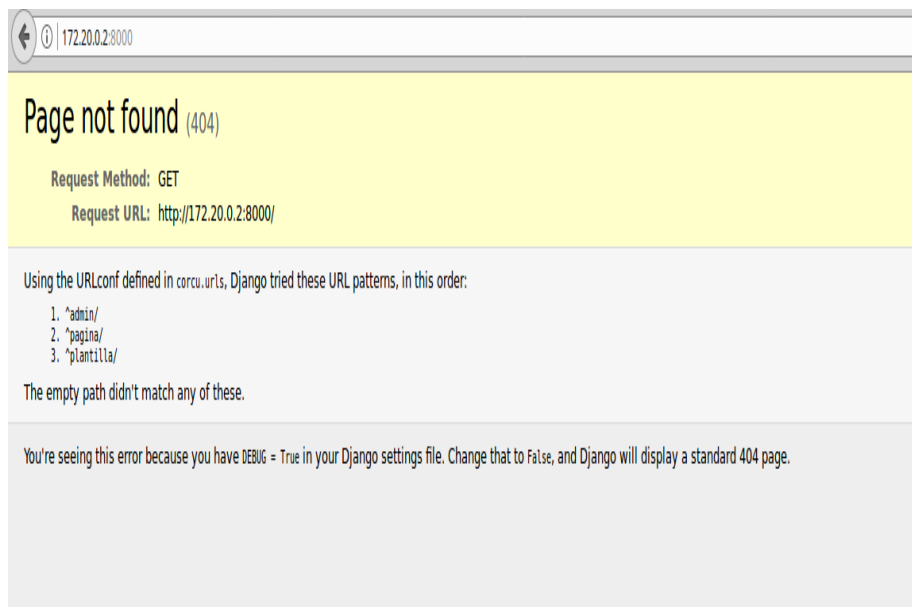


Figura 1.7: Consulta ip



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Esto indica un error posto que a direccion non e válida para o noso proxecto se lle engadimos /pagina entonses si funcionará.

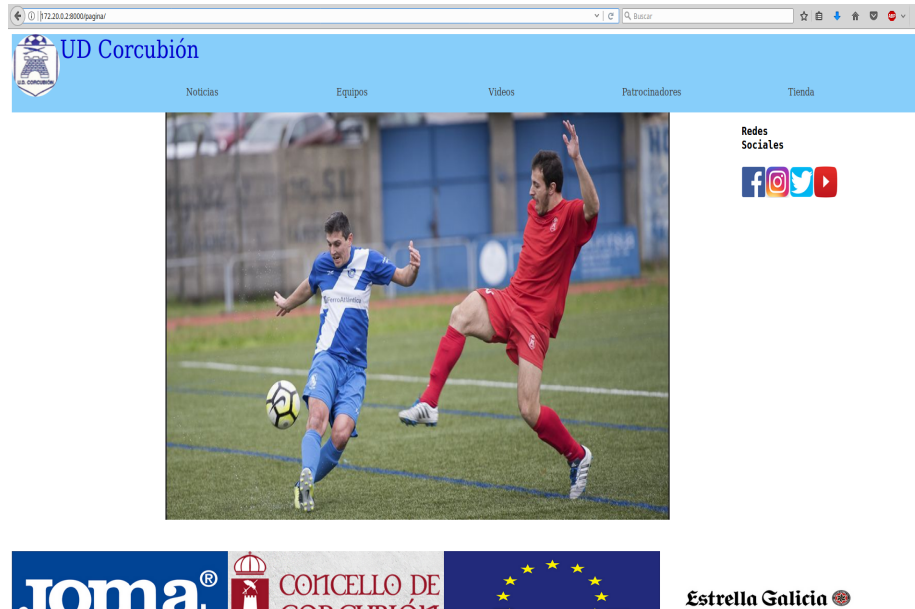


Figura 1.8: Pagina

1.1. Referencias:

<https://github.com/mmorejon/docker-django>
<https://docs.docker.com/compose/django/# connect-the-database>