UNIVERSIDAD GALILEO

Posgrado en Análisis y Predicción de Datos

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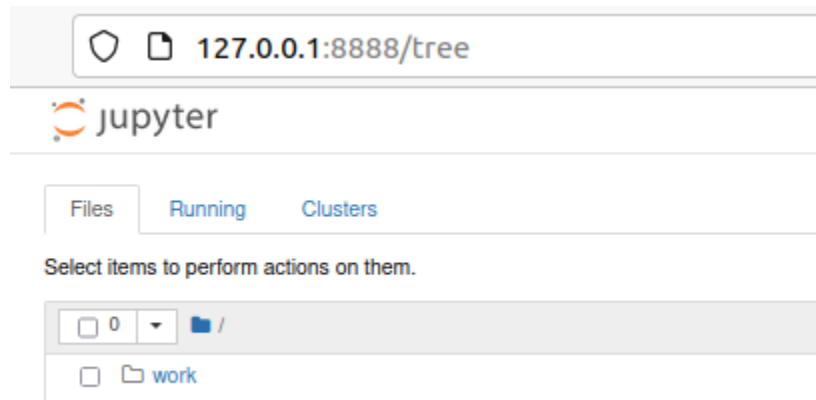

Versión de Docker instalada

```
jarminet@jarminet:~$ docker --version
Docker version 20.10.10, build b485636
```

Descargar imagen "busybox"

```
jarminet@jarminet:~$ sudo docker pull busybox
Using default tag: latest
latest: Pulling from library/busybox
01c2cdc13739: Pull complete
Digest: sha256:15e927f78df2cc772b70713543d6b651e3cd8370abf86b2ea4644a9fba21107f
Status: Downloaded newer image for busybox:latest
docker.io/library/busybox:latest
```

Run Jupyter container


```
jarminet@jarminet:~$ sudo docker ps
CONTAINER ID   IMAGE                  COMMAND                CREATED         STATUS          PORTS
      NAMES
5dda2a2e27f3   jupyter/base-notebook  "tini -g -- start-no…" 2 minutes ago   Up 2 minutes    0.0.0.0:8888->8888/tcp, :::8888->8888/tcp
      serene_wilson
```

MySQL and Jupyter

```
jarminet@jarminet:~$ sudo docker ps
CONTAINER ID   IMAGE                  COMMAND                CREATED         STATUS          PORTS                                                       NAMES
907ad25392d2   jupyter/base-notebook  "tini -g -- start-no…" 9 minutes ago   Up 9 minutes    0.0.0.0:8888->8888/tcp, :::8888->8888/tcp                   epic_hugle
41be94ddf7bb   mysql:5.7.35           "docker-entrypoint.s…" 16 minutes ago  Up 16 minutes   0.0.0.0:3306->3306/tcp, :::3306->3306/tcp, 33060/tcp        peaceful_galois
```

Docker Compose

Escritura de archivo yml.

A `docker-compose.yml` looks like this:

```
version: "3.9"  # optional since v1.27.0
services:
  web:
    build: .
    ports:
      - "5000:5000"
    volumes:
      - .:/code
      - logvolume01:/var/log
    links:
      - redis
  redis:
    image: redis
volumes:
  logvolume01: {}
```

Ejecución de Docker Compose file (yml).

```
jarminet@jarminet:~/Desktop/Maestria/ProductDevelopment/docker-compose$ sudo docker-compose up
[sudo] password for jarminet:
Starting docker-compose_jupyter_1 ... done
Starting docker-compose_db_1      ... done
Attaching to docker-compose_jupyter_1, docker-compose_db_1
jupyter_1  | WARN: Jupyter Notebook deprecation notice https://github.com/jupyter/docker-stacks#jupyter-notebook-deprecati
on-notice.
jupyter_1  | Executing the command: jupyter notebook
db_1       | 2021-11-01 01:38:36+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 5.7.35-1debian10 started.
db_1       | 2021-11-01 01:38:36+00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'
db_1       | 2021-11-01 01:38:36+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 5.7.35-1debian10 started.
db_1       | 2021-11-01T01:38:36.971788Z 0 [Warning] TIMESTAMP with implicit DEFAULT value is deprecated. Please use --exp
licit_defaults_for_timestamp server option (see documentation for more details).
```

Contenedores corriendo antes de ejecutar Docker Compose

```
jarminet@jarminet:~$ sudo docker ps
CONTAINER ID    IMAGE       COMMAND       CREATED    STATUS      PORTS       NAMES
jarminet@jarminet:~$
```

Contenedores corriendo después de ejecutar Docker Compose

```
jarminet@jarminet:~/Desktop/Maestria/ProductDevelopment/Product-Development/Docker$ sudo docker ps
CONTAINER ID    IMAGE                   COMMAND               CREATED       STATUS         PORTS                                                          NAMES
1f464b6f2609    jupyter/base-notebook   "tini -g -- start-no…"  2 weeks ago   Up 3 minutes   0.0.0.0:8888->8888/tcp, :::8888->8888/tcp                      docker-compose_jupyter_1
2d74f6793dfa    mysql:5.7.35            "docker-entrypoint.s…"  2 weeks ago   Up 3 minutes   0.0.0.0:3306->3306/tcp, :::3306->3306/tcp, 33060/tcp           docker-compose_db_1
```

Utilizando el domain name server que proporciona docker compose.

```
In [1]: !pip install pandas
        !pip install mysql-connector-python

        Requirement already satisfied: pandas in /opt/conda/lib/python3.9/site-packages (1.3.3)
        Requirement already satisfied: pytz>=2017.3 in /opt/conda/lib/python3.9/site-packages (from pandas) (2021.3)
        Requirement already satisfied: python-dateutil>=2.7.3 in /opt/conda/lib/python3.9/site-packages (from pandas) (2.8.
        2)
        Requirement already satisfied: numpy>=1.17.3 in /opt/conda/lib/python3.9/site-packages (from pandas) (1.21.2)
        Requirement already satisfied: six>=1.5 in /opt/conda/lib/python3.9/site-packages (from python-dateutil>=2.7.3->pand
        as) (1.16.0)
        Requirement already satisfied: mysql-connector-python in /opt/conda/lib/python3.9/site-packages (8.0.26)
        Requirement already satisfied: protobuf>=3.0.0 in /opt/conda/lib/python3.9/site-packages (from mysql-connector-pytho
        n) (3.18.1)
```

```python
In [7]: from sqlalchemy import create_engine

        #Como le llego a la IP del contenedor de la base datos?  Inspeccionar la red? No.  Una de las cosas en que nos
        # ayuda también Docker-Compose es que
        source = create_engine('mysql+mysqlconnector://test:test123@db/test')
```

```python
In [8]: import pandas as pd

        pd.read_sql('select now()', con=source)
```

Out[8]:

	now()
0	2021-11-01 01:57:02