

Universidad Galileo

Maestría en Data Science (PAPD)

Product Development

Sección U

Tarea 1

Docker

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Docker

INSTALACIÓN DE DOCKER

```
C:\Windows\system32\cmd.exe

C:\Users\hbarrientosg>docker --version
Docker version 20.10.8, build 3967b7d

C:\Users\hbarrientosg>_
```

Imagen 1 – Versión de Docker instalada

EJECUCIÓN DE JUPYTER NOTEBOOK

```
C:\Windows\system32\cmd.exe - docker run -p 8888:8888 jupyter/base-notebook

C:\Users\hbarrientosg>
C:\Users\hbarrientosg>docker run -p 8888:8888 jupyter/base-notebook
WARN: Jupyter Notebook deprecation notice https://github.com/jupyter/docker-stacks#jupyter-notebook-deprecation-notice.
Executing the command: jupyter notebook
[I 05:03:28.027 NotebookApp] Writing notebook server cookie secret to /home/jovyan/.local/share/jupyter/runtime/notebook_cookie
[W 2021-10-29 05:03:30.253 LabApp] 'ip' has moved from NotebookApp to ServerApp. This config will be passed to ServerApp.
[W 2021-10-29 05:03:30.254 LabApp] 'port' has moved from NotebookApp to ServerApp. This config will be passed to ServerApp.
[W 2021-10-29 05:03:30.255 LabApp] 'port' has moved from NotebookApp to ServerApp. This config will be passed to ServerApp.
[I 2021-10-29 05:03:30.307 LabApp] JupyterLab extension loaded from /opt/conda/lib/python3.9/site-packages/jupyterlab
[I 2021-10-29 05:03:30.308 LabApp] JupyterLab application directory is /opt/conda/share/jupyter/lab
[I 05:03:30.328 NotebookApp] Serving notebooks from local directory: /home/jovyan
[I 05:03:30.329 NotebookApp] Jupyter Notebook 6.4.5 is running at:
[I 05:03:30.329 NotebookApp] http://f23447fda39d:8888/?token=34c1c6fe47074c50165d504b52d7f8a509b93f16e8ea2dc6
[I 05:03:30.329 NotebookApp] or http://127.0.0.1:8888/?token=34c1c6fe47074c50165d504b52d7f8a509b93f16e8ea2dc6
[I 05:03:30.329 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 05:03:30.356 NotebookApp]

To access the notebook, open this file in a browser:
file:///home/jovyan/.local/share/jupyter/runtime/nbserver-8-open.html
Or copy and paste one of these URLs:
http://f23447fda39d:8888/?token=34c1c6fe47074c50165d504b52d7f8a509b93f16e8ea2dc6
or http://127.0.0.1:8888/?token=34c1c6fe47074c50165d504b52d7f8a509b93f16e8ea2dc6
[I 05:05:21.155 NotebookApp] 302 GET /?token=34c1c6fe47074c50165d504b52d7f8a509b93f16e8ea2dc6 (172.17.0.1) 1.890000ms
```

Imagen 2 – Ejecución de contenedor de jupyter notebook

CREACIÓN Y EJECUCIÓN DE NOTEBOOK

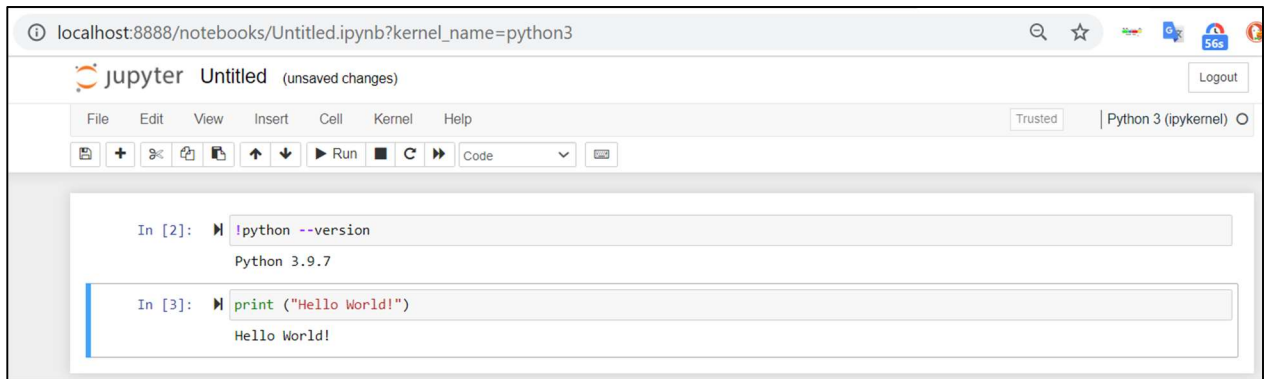


Imagen 3 – Jupyter notebook en explorador web

CONEXIÓN A BASE DE DATOS

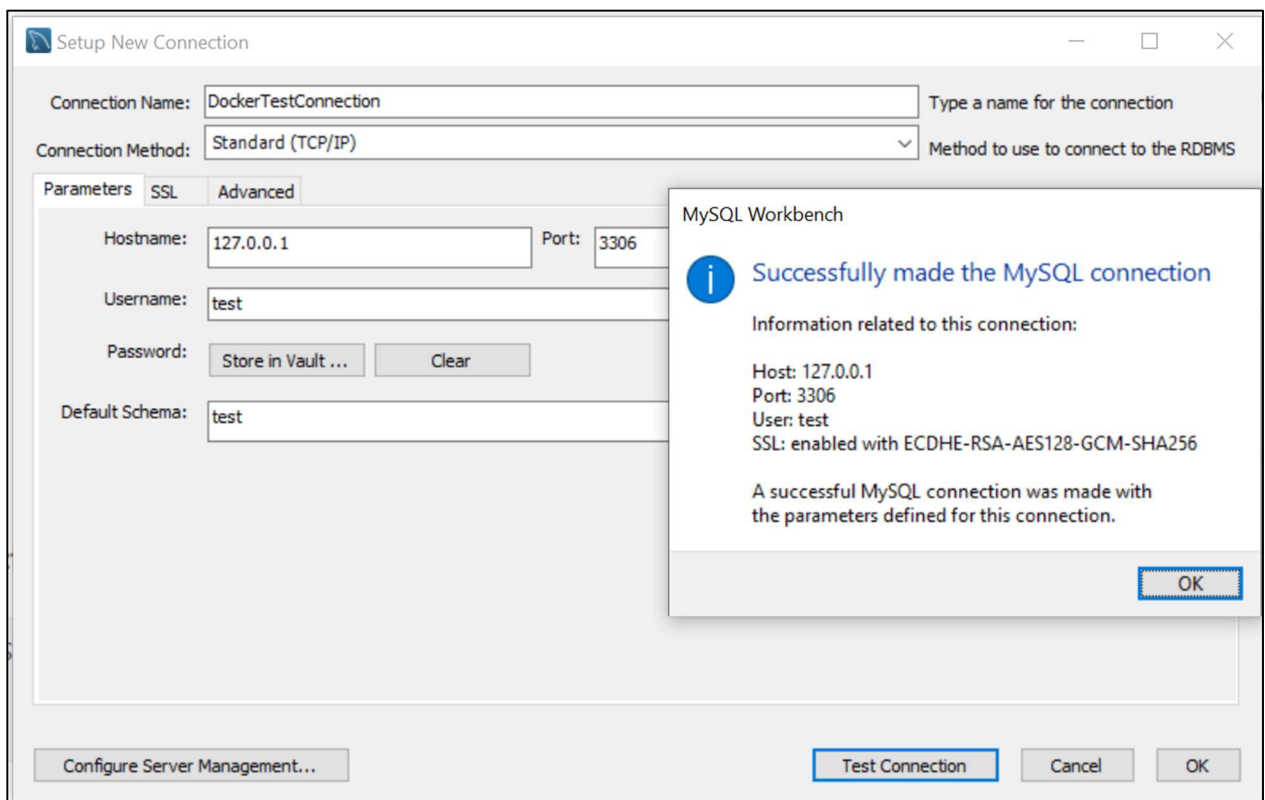


Imagen 4 – Prueba de conexión a base de datos MySQL en contenedor

DETALLE DE RED Y CONTENEDORES EN EJECUCIÓN

```
"Containers": {
  "a74dfd978dd6da41e4f781bfc34d4d0168917bbb8d55a82b908415377efb9e1d": {
    "Name": "vigilant_meninsky",
    "EndpointID": "7ed3177e956de783962869408e99462bc3f52044b6e210bc35fbcdbd0c12ed55e",
    "MacAddress": "02:42:ac:12:00:03",
    "IPv4Address": "172.18.0.3/16",
    "IPv6Address": ""
  },
  "f4b0a11ceecd571a4e4fc3b777ca0286bd4280bf67b4de248091bcf2eb52cf9f": {
    "Name": "objective_brattain",
    "EndpointID": "14f0964a37e6ad38674d2f9e279d7b836677fd1fc1c3afe01a4045d59fc755f",
    "MacAddress": "02:42:ac:12:00:02",
    "IPv4Address": "172.18.0.2/16",
    "IPv6Address": ""
  }
},
"Options": {},
"Labels": {}
}
]

C:\Users\hbarrientosg>docker ps
CONTAINER ID   IMAGE               COMMAND                  CREATED        STATUS        PORTS                               NAMES
a74dfd978dd6   jupyter/base-notebook   "tiny -g -- start-no..."   4 minutes ago   Up 4 minutes   0.0.0.0:8888->8888/tcp          vigilant_meninsky
f4b0a11ceecd   mysql:5.7.35           "docker-entrypoint.s..."   4 minutes ago   Up 4 minutes   0.0.0.0:3306->3306/tcp, 33060/tcp objective_brattain
```

Imagen 5 – Detalle de red e imágenes en ejecución.

CONEXIÓN A BASE DE DATOS DESDE JUPYTER

```
localhost:8888/notebooks/Untitled.ipynb?kernel_name=python3

jupyter Untitled (unsaved changes)
File Edit View Insert Cell Kernel Help

In [1]: !pip install pandas

Collecting pandas
  Downloading pandas-1.3.4-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (11.5 MB)
    11.5 MB 422 kB/s
Requirement already satisfied: pytz>=2017.3 in /opt/conda/lib/python3.9/site-packages (from pandas)
Requirement already satisfied: python-dateutil>=2.7.3 in /opt/conda/lib/python3.9/site-packages (from pandas)
Collecting numpy>=1.17.3
  Downloading numpy-1.21.3-cp39-cp39-manylinux_2_12_x86_64.manylinux2010_x86_64.whl (15.7 MB)
    15.7 MB 386 kB/s
Requirement already satisfied: six>=1.5 in /opt/conda/lib/python3.9/site-packages (from python-dateutil)
Installing collected packages: numpy, pandas
Successfully installed numpy-1.21.3 pandas-1.3.4

In [2]: from sqlalchemy import create_engine
import pandas as pd

In [4]: source = create_engine("mysql+mysqlconnector://test:test123@172.18.0.2/test")
pd.read_sql("SELECT NOW()", con=source)

Out[4]:
      NOW()
0 2021-10-30 04:17:02
```

Imagen 6 – Conexión a base de datos desde Jupyter en la misma red.