

High-Performance Data Analytics Demo with PyOphidia

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**ESiWACE2 Training on High Performance
Data Analytics and Visualisation**

Session 3

15 September 2021



Environment setup

Requirements: *Docker, git CLI and a web browser*

For the tutorial we are using the *Ophidia all-in-one training container* from DockerHub:

```
docker pull ophidiabigdata/ophidia-training:latest
```

Further information at: <https://hub.docker.com/r/ophidiabigdata/ophidia-training>

Retrieve the tutorial/demo material from *GitHub*:

```
git clone https://github.com/ESiWACE/hpda-vis-training.git
```

If you already have it, check for the latest version. To get updates:

```
cd hpda-vis-training  
git pull
```



Start the environment

Download the data required for the training:

```
cd hpda-vis-training/Training2021/Session3
./get_data.sh
```

You should now see two CMIP5 NetCDF files under the git repository folder.

From the same folder start the container, binding the tutorial material repo path (\$PWD):

```
docker run --rm -it -v $PWD:/home/ophidia/notebooks -p 8888:8888
ophidiabigdata/ophidia-training:latest
```

This container includes the full Ophidia software stack, a Jupyter Notebook server and a set of scientific Python modules.



Access the environment

If started correctly, you should get something like the following messages in the terminal:

```
[I 20:43:36.116 NotebookApp] Writing notebook server cookie secret to
/usr/local/ophidia/.local/share/jupyter/runtime/notebook_cookie_secret
[I 20:43:36.539 NotebookApp] Serving notebooks from local directory: /home/ophidia
[I 20:43:36.539 NotebookApp] Jupyter Notebook 6.4.0 is running at:
[I 20:43:36.540 NotebookApp] http://172.17.0.2:8888/
[I 20:43:36.540 NotebookApp] Use Control-C to stop this server and shut down all kernels
(twice to skip confirmation).
```

Now copy the URL showed by the message (e.g., <http://172.17.0.2:8888/>) in your browser to open the Jupyter Notebook UI and type '*ophidia*' as password.



Password:

Log in



Run the demo/hands-on notebooks



Quit

Logout

Files

Running

Clusters

Go in the notebooks folder

Select items to perform actions on them.

Upload

New ▾



0 ▾ / notebooks

	Name ▾	Last Modified	File size
<input type="checkbox"/>	..	alcuni secondi fa	
<input type="checkbox"/>	Examples	alcuni secondi fa	
<input type="checkbox"/>	Hands-on	un minuto fa	
<input type="checkbox"/>	imgs	2 giorni fa	
<input type="checkbox"/>	PyOphidia_Basics.ipynb	10 giorni fa	24.9 kB
<input type="checkbox"/>	get_data.sh	12 giorni fa	467 B
<input type="checkbox"/>	README.md	12 giorni fa	2.83 kB
<input type="checkbox"/>	tasmax_day_CMCC-CESM_rcp85_r1i1p1_20960101-21001231.nc	9 anni fa	33.7 MB
<input type="checkbox"/>	tasmin_day_CMCC-CESM_rcp85_r1i1p1_20960101-21001231.nc	9 anni fa	33.7 MB

Location of the hands-on notebooks

The demo will show the PyOphidia_Basics notebook



Questions?

ESiWACE2 has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 823988



More about Ophidia?

Ophidia website: <http://ophidia.cmcc.it>

Contact: [ophidia-info \[at\] cmcc.it](mailto:ophidia-info[at]cmcc.it)

Social media: <https://twitter.com/OphidiaBigData>

