

# Quick guide CESGA

MIA - Deep Learning

Course 2024/2025

Brief guide on how to make use of CESGA resources for Deep Learning practices.

**NOTE:** *it is assumed that the user is registered with CESGA.*

## 1 Instructions

1. Through <https://portalusuarios.cesga.es>, start a remote viewing session in Finisterrae-III (underlined in Figure 1).

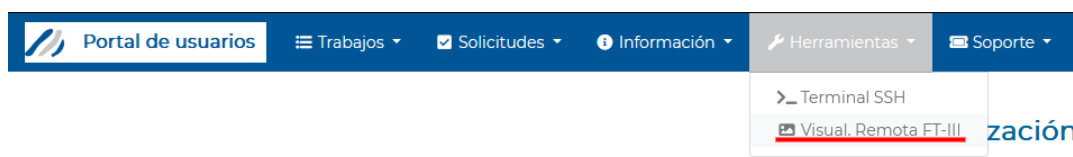


Figure 1: CESGA user portal web interface.

2. On a terminal, request a compute session with GPU and 16GB of memory (depending on the project it will be necessary to request more or less memory):

```
compute --gpu --mem 16G
```

This computing session will have access to the different files of our user (see documentation on how to transfer files). Due to storage quotas, it may be necessary to follow these steps in order to install all the necessary packages for our environment (it is recommended to do it first, in order to avoid problems later on).

3. Load the module `miniconda3` provided by CESGA.

```
module load cesga/system miniconda3
```

4. Create and activate a new Conda environment:

```
conda create --name mia-dl python=3.11
conda activate mia-dl
```

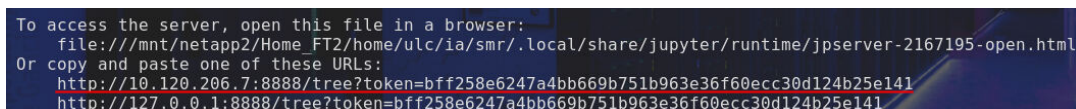
5. Install the necessary packages for the practice:

```
pip install tensorflow[and-cuda]
pip install keras
pip install matplotlib
pip install notebook
```

6. Launch the `jupyter` environment so that we can access it from our remote virtualization session (the environment runs on the machine corresponding to the computing session):

```
jupyter notebook --no-browser --ip=$(hostname -i)
```

In the console, the environment execution trace will start to be displayed, and when it is loaded, the address (underlined in Figure 2) where we can access the web application will appear:



```
To access the server, open this file in a browser:
file:///mnt/netapp2/Home_FT2/home/ulc/ia/smr/.local/share/jupyter/runtime/jpserver-2167195-open.html
Or copy and paste one of these URLs:
http://10.120.206.7:8888/tree?token=bff258e6247a4bb669b751b963e36f60ecc30d124b25e141
http://127.0.0.1:8888/tree?token=bff258e6247a4bb669b751b963e36f60ecc30d124b25e141
```

Figure 2: Console output of the address of the web application `jupyter`

## 2 Considerations

- **Lifetime:**

- Computing sessions have a maximum lifetime of 8 hours, after which they are closed directly, regardless of whether any task is being performed or not. It is important to organize the work with this in mind, as it could happen that the session is closed in the middle of a training session.
- Remote viewing sessions have a default lifetime of 36 hours, which can be manually increased from within the environment (Fig. 3).

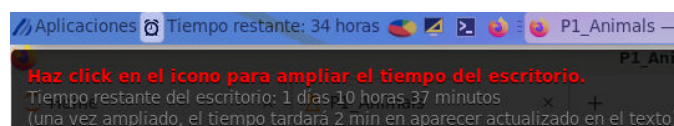


Figure 3: Extension of remote viewing session time

- **Execution on CPU or GPU:** the resources available to CESGA are abundant but also limited, so it may take some time to be assigned with a GPU when requesting the computation session. This guide is a reference to be able to use these resources, but it is up to the user to choose whether to perform the tasks with CPU (always available with the remote virtualization session) or with GPU (available in a limited way with a maximum of 8 hours per session).