

Deep Learning Example

The INCD-Lisbon facility provide a few GPU, check the [Comput Node Specs](#) page.

Login on the submit node

Login on the cluster submission node, check the [How to Access](#) page for more information:

```
$ ssh -l <username> cirrus8.a.incd.pt  
[username@cirrus01 ~]$ _
```

Alternatives to run the Deep Learning example

We have alternatives to run the *Deep Learning* example, or any other python based script:

1. prepare a user python virtual environment on home directory and launch a batch job;

The next three sections shows how to run the example for each method.

1) Run a Deep Learning job using a prepared CVMFS python virtual environment

Instead of preparing an user python virtual environment we can use the environment already available on the system, named **python/3.10.13**, check it with the command

```
[username@cirrus08 ~]$ module avail  
----- /cvmfs/sw.el8/modules/hpc/main -----  
...  
intel/oneapi/2023  python/3.8      udocker/alphafold/2.3.2  
julia/1.6.7       python/3.10.13 (D)  
...
```

“ We will find other **python** version, namely version **3.7** and **3.8**, this version do not contain the **tensorflow** module due to **python** version incompatibility.

We will change the submit script **dl.sh** to the following:

```
[username@cirrus08 dl]$ vi dl.sh
#!/bin/bash
#SBATCH -p gpu
#SBATCH --gres=gpu
#SBATCH --mem=64G

module load python/3.10.7
python run.py

[username@cirrus08 dl]$ ls -l
-rwxr-----+ 1 username usergroup 124 Feb 26 16:44 dl.sh
-rw-r-----+ 1 username usergroup 1417 Feb 26 16:46 run.py
```

Submit the Job

```
[username@cirrus08 dl]$ sbatch dl.sh
Submitted batch job 15135448
```

JOBID	PARTITION	NAME	USER	ST TIME	NODES	CPUS	TRES_PER_NODE	NODELIST
15290034	gpu	dl.sh	jpina	PD 0:00	1	1	gres/gpu	

Check Job results

On completion check results on standard output and error files:

```
[username@cirrus08 dl]$ ls -l
-rwxr-----+ 1 username usergroup 124 Feb 26 16:44 dl.sh
-rw-r-----+ 1 username usergroup 1417 Feb 26 16:46 run.py
-rw-r-----+ 1 username usergroup 18000 Feb 26 18:51 slurm-15135448.out
```

and proceed as in the previous example.

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