Leonhard Cluster Instructions

To join the cluster, please check if you have COSS share holder access, which means you should be able to login to Leonard cluster and use the big GPUs.

How can I get access to the actual COSS resources?

To check the COSS resources you can login to the cluster with ssh:
https://scicomp.ethz.ch/wiki/Getting_started_with_clusters#SSH

Once you successfully login then you can actually start preparing your code for running. The node that you login is referred to as 'login node', which is used for preparing the code, setting up related libraries and other dependencies etc.

Testing/Developing Code

Be careful, in the login node you can test only CPU code and a limited amount of memory and disk space.
You may do some local tests on cpu, and then switch to GPU flag if you use specific libraries like pytorch.

Please load the modules that have dependencies that you want from the cluster:
https://scicomp.ethz.ch/wiki/Getting_started_with_clusters#Setting_up_the_Environment
For some modules like torch, you can install them locally via pip:
https://scicomp.ethz.ch/wiki/Python/Extension

Deploying Code and Running Experiments

Once you are done setting up the project, then you need to deploy it in an experimental node and run experiments. Running experiments on the login node is wrong!

To run on an experimental node you submit the developed code by entering in the ssh terminal the b-sub command:
https://scicomp.ethz.ch/wiki/Using_the_batch_system
https://scicomp.ethz.ch/wiki/Getting_started_whttps://scicomp.ethz.ch/wiki/Getting_started_with_GPUs

If you submit a python script that does some computations, you can actually do a check and see what device you are using.
E.g. you can submit a script with bsub and GPU specification and the do the following:

test.py contents:

```
import torch
a = torch.randn([1000], device='cuda:0')
torch.save('random_tensor.pt', a)
```

bsub …options `-R "select[gpu_model0==GeForceGTX1080Ti]" test.py`

Once the job finishes the file will appear in the login node, in the directory of the script.

Outputs and logs

Furthermore an output file will be generated with any console output that happened during running:
https://scicomp.ethz.ch/wiki/Using_the_batch_system#Output_file

You may open it and if you notice any errors saying that “Cuda is not available”, then we need to check your access rights.
You can also check the above test via terminal interaction by using an interactive job:

https://scicomp.ethz.ch/wiki/Using_the_batch_system#Batch_interactive_job

Notes

At coss we mainly have the big GPU models:

```
-R "select[gpu_model0==TeslaV100_SXM2_32GB]"
```