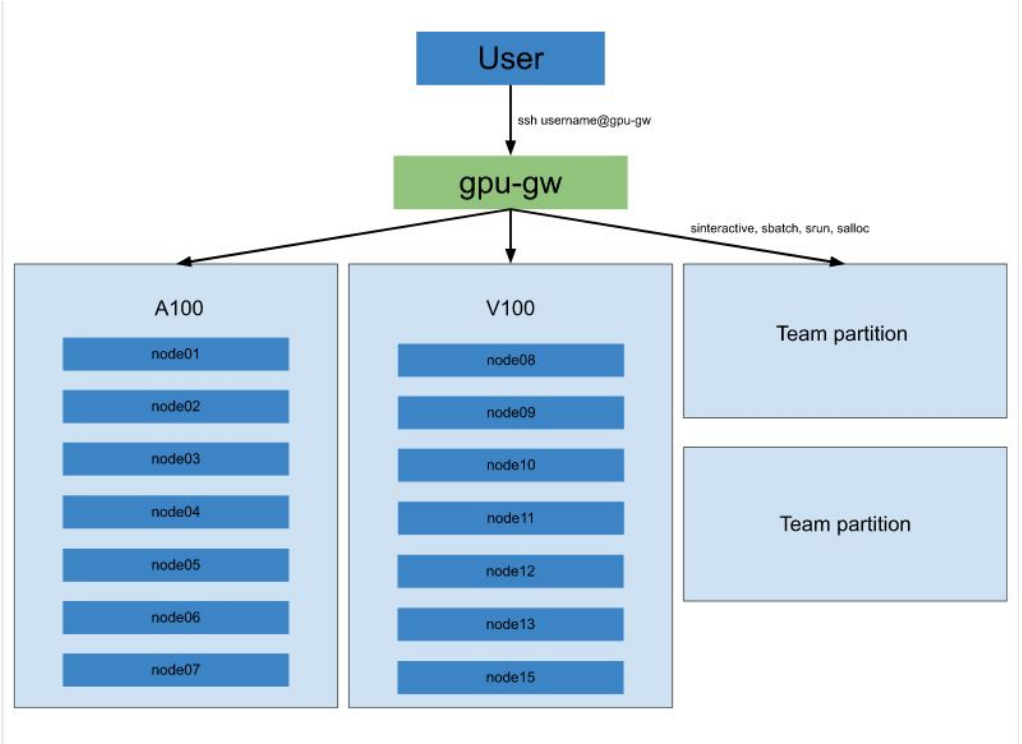
NEW Cluster presentation

SLURM

- 7 nodes each composed of:
  - 3 Nvidia A100 40G
  - 378G of RAM
  - 64 AMD CPU 16 cores
- 8 nodes each composed of:
  - 2 Nvidia V100 (4x16G | 4x32G)
  - 250G of RAM
  - 2 AMD CPU 16 cores



- Can’t access node directly
- Wait queue mode with priority
- Interactive and wait queue mode

First, create a storage space on ids server:

Connect via ssh to ids cluster: tsi-cluster.

```
ssh username@tsi-cluster.enst.fr
```

You might need to connect to ssh1 first to access the school’s network:

```
ssh username@ssh1.enst.fr
```

Accessing the SLURM contrôler

To connect to the contrôler:

```
ssh username@gpu-gw.enst.fr
```

If you are on windows, you can use a SSH client such as MobaXterm.

By default, you have a zsh console, if you prefer a bash one, simply type bash as a command

You should be in your home stored on ids server, to check:

`pwd`

If not, you should be able to cd in it:

`cd /home/ids/<login>` (limited to 80To for all the users and really slow)

or

`cd /home/infres/<login>`

Virtual env

For the moment, every user needs to install a virtual environment manager like anaconda or miniconda.

You should install it in your HOME.

https://docs.anaconda.com/anaconda/install/linux/

Note: to download anaconda installer with a command line:

```
wget https://repo.anaconda.com/archive/Anaconda3-2022.10-Linux-x86_64.sh
```

You might need to add the anaconda directory to your PATH variables :

```
export PATH="<path_to_anaconda>/bin:$PATH"
```

Job submission: Interactive mode

- Only use to debug your code
- Limited in time (10H)

sinteractive //to access a console on a node

You have the following option to change the configuration:

--time (JJ-HH:MM:SS)

--gpus (number of GPU, 20 CPU per GPU)

--mem (units: K|M|G)

--partition (A100 | V100 | mm)

ex: sinteractive --gpus 3 --time 00-10:00:00 --partition A100

Once you have been affected to a node, you can access it via ssh from your personal computer.

This can be used to:

- connect a debugger
- access a jupyter notebook
- access tensorboard

You can also use wandb in your code

See the documentation for more details: Doc

Job submission: wait queue mode (sbatch)

- Used to execute heavy job for a long time
- No limit in usage

You can only submit a bash script to the queue:

```
#!/bin/bash


#SBATCH --output=TravailGPU%j.out          # fichier de sortie (%j = job ID)
#SBATCH --error=TravailGPU%j.err           # fichier d'erreur (%j = job ID)
#SBATCH --time=00:10:00                    # temps maximal d'allocation "(HH:MM:SS)"
#SBATCH --nodes=1                          # reserver 1 nœud
#SBATCH --gpus:8                           # reserver 8 GPU
#SBATCH --cpus-per-task=3                  # reserver 3 CPU par tache (et memoire associee)


set -x                                     # activer l'echo des commandes
srun python -u script.py                   # executer son script
```

This script must contains:

- A job configuration heading (name of job, requested resources, ….) in the form of a list of SLURM options preceded by the word $SBATCH.

  (list of all option:SBATCH)

- The command lines to execute (loading virtual env, launching the executable file,..)

To submit this script to the queue, you have to use the following command:

```
sbatch <scriptname>
```

Priority and max ressources

Once in the queue, your job will have a priority based on:

- Age in the queue (the longer it waits the more prioritized it is)
- Job size (the more ressources you ask, the less you are prioritized)
- The amount of resources you have ask during the last 2 weeks (the more you use the cluster, the less you are prioritized)

The A100 partition has a time limit of 24h

The V100 partition will have a time limit of 48h

The P100 partition will not be limited

Local storage

Node01 to node07 have 7To of local storage.

You don’t have access in writing but I can store dataset there to speed-up your computation time.

Request list: List of datasets

For any remarks or question: you can message me directly on slack or use the gpu-users channel:

- @Guillaume Lechantre
- #gpu-users