

Setup Katana for GPU work

1. You need to first apply for a katana account using the link <https://research.unsw.edu.au/katana> or email to ITServiceCentre@unsw.edu.au. Supervisor need to be copied in order to validate your request.
2. Once the account is created, You can access the katana cluster. However, if you need to apply for a specific group- for an instance, I have applied to **DBGCSSE** group since the group has access to High Performance GPUs, you can contact the katana administrator with this request (CCing the supervisor). Please wait till this request to approve
3. Katana has excellent documentation on how to work with it. Please refer this [link](#).
4. SSH to katana environment and you will be using the login node when you first ssh to katana.
5. Install `conda` or `pip` as your package manager and continue with the general package installation procedure. You can do this while in login node. The packages and user source code can be in login node and are backed up as well.
6. In this example I have created an environment called `pantomine` in `conda` and already installed the packages
7. You should then start an [Interactive Job](#). interactive job will allocate the resources and deliver to the head nodes in katana to execute.
8. Since I require to have GPUs for my work, the resource allocation code is as follows.

```
(pantomine) [z5262974@katana1 source_files]$ qsub -l select=1:ncpus=16:ngpus=1:mem=46gb,walltime=36:00:00 -W group_list=DBGCSSE
qsub: waiting for job 1433953.kman.restech.unsw.edu.au to start
qsub: job 1433953.kman.restech.unsw.edu.au ready
```

This will open up a new Interactive session with 16 CPUs 1 GPUs for 36 Hours. This is depending on your requirements. This will take some time and the terminal will show the the job is ready.

9. You will have to check whether you have connected to the GPU machine (`ssh k109`).

```
(pantomine) [z5262974@k109 sampling]$
```

10. Typing `nvidia-smi` in terminal will show the available GPUs in the machine. Please note that this will only be accessible for 36 hours

```

(pantomine) [z5262974@k109 sampling]$ nvidia-smi
Wed Sep  1 12:04:32 2021

+-----+
| NVIDIA-SMI 460.73.01    Driver Version: 460.73.01    CUDA Version: 11.2    |
+-----+-----+-----+-----+-----+-----+
| GPU  Name           Persistence-M| Bus-Id        Disp.A | Volatile Uncorr. ECC | | |
| Fan  Temp   Perf    Pwr:Usage/Cap|      Memory-Usage | GPU-Util  Compute M. |
|====|=====|=====|=====|=====|
|  0   Tesla V100-SXM2...  On      | 00000000:18:00:0 Off  |      0%      E. Process |
| N/A   35C    P0      40W / 300W |  0MiB / 32510MiB |             N/A      |
+-----+-----+-----+-----+-----+-----+
|  1   Tesla V100-SXM2...  On      | 00000000:3B:00:0 Off  |      0%      E. Process |
| N/A   31C    P0      41W / 300W |  0MiB / 32510MiB |             N/A      |
+-----+-----+-----+-----+-----+-----+
|  2   Tesla V100-SXM2...  On      | 00000000:86:00:0 Off  |      0%      E. Process |
| N/A   32C    P0      42W / 300W |  3MiB / 32510MiB |             N/A      |
+-----+-----+-----+-----+-----+-----+
|  3   Tesla V100-SXM2...  On      | 00000000:AF:00:0 Off  |      0%      E. Process |
| N/A   36C    P0      45W / 300W |  3MiB / 32510MiB |             N/A      |
+-----+-----+-----+-----+-----+-----+

Processes:
+-----+-----+-----+-----+-----+-----+
| GPU  GI   CI       PID   Type   Process name                      GPU Memory |
|   ID  ID  ID                                Usage    |
+-----+-----+-----+-----+-----+-----+
| No running processes found |
+-----+-----+-----+-----+-----+-----+

```

12. Now you can use `ssh/scp` or use a IDE which support remote code executing to start running you GPU enabled code in katana.