

# mycscons on Mio

January 6, 2020

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- We can use `srun` to submit to the cluster
  - This allows us to batch submit scripts
  - However, we have another option for m8r

# Submitting to the cluster

- When logging into Mio you are on the head node
- The head node is not meant for computations
  - Especially when many users are on (like today!)
- We can use `./mycscons` to submit an SConstruct to the cluster
  - Requires from rsf.mycluster import \*
  - Requires Cluster() command in Sconstruct

# Some helpful tools

- Submit a job
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  - `./mycscons` submits the SConstruct in that location
  - Option: `-f filename` if you have other naming conventions
- Submitting in this way automatically lists where log and error files go
  - They live in your scratch directory

# When a job is running

- Using `squeue` shows all running jobs on the cluster
  - Adding `-u username` filters on that *username*
  - Probably a good idea to alias in your `~/ .bashrc`
    - `alias sq="squeue -u username"`

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    - `alias sq="squeue -u username"`
- Also shows the task number
  - If you have a job that hangs or is incorrect, rather than waiting you should cancel it:
    - `scancel ####` (← the task number!)



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- It is not possible to simply log into a compute node and run a task!!!
  - Slurm allocates resources for us
  - This is to avoid conflicts with other users
- However, once resources are allocated to your job, you can log into that node to QC
  - Usually not necessary

# Running an interactive job

- If you have a larger compute job not appropriate for the head node, you can request a resource for command line operations
  - `srun -n12 --pty bash -i`

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- If you have a larger compute job not appropriate for the head node, you can request a resource for command line operations
  - `srun -n12 --pty bash -i`
    - Requests a 12 cpu node with taskname “bash” for an interactive job
- This is not a standard request
  - Remember to exit the interactive job when finished or you will hold the node!

# Log and Error files

Once a job is submitted, the following text is output.

This is good to note! It tells about the job submission...

```
[agirard@mio001 05_Seismic_Modelling]$ vim mycscons
[agirard@mio001 05_Seismic_Modelling]$ ./mycscons -f SConstruct_complete
('USER IS:', 'agirard')
STARTING SUBMISSION SCRIPT
IN ELSE
SConstruct_complete
Removing extra jobs...
Found: 1 jobs
Creating job directory...
.....pbs directory already exists
.....Fig directory already exists
Preparing jobs...
Job 1/1 - Serial:60 1 12 - TESTm8r-s-00
Making job files...
MAKING FILE
/gpfs/lb/sets/geop/scratch/agirard/
('SCONSJ: ', 1)
('PPN: ', 12)
('NSOCKET', 2)
('NODES', 1)
nodes: 1
Submitting jobs...

Executing... sbatch /gpfs/lb/sets/geop/scratch/agirard/SLURM//TESTm8r-s-00
Job submitted to: Submitted batch job 8266842

EXECUTED COMMAND
[agirard@mio001 05_Seismic_Modelling]$
```

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The most important part is the log and error file locations (in red)

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EXECUTED COMMAND
[agirard@mio001 05_Seismic_Modelling]$ ls -ltr /gpfs/lb/sets/geop/scratch/agirard/SLURM//TESTm8r-s-00*
-rw-r----- 1 agirard agirard 744 Jan 6 15:23 /gpfs/lb/sets/geop/scratch/agirard/SLURM//TESTm8r-s-00
-rw-r----- 1 agirard agirard 1439 Jan 6 15:23 /gpfs/lb/sets/geop/scratch/agirard/SLURM//TESTm8r-s-00.out
-rw-r----- 1 agirard agirard 65536 Jan 6 15:23 /gpfs/lb/sets/geop/scratch/agirard/SLURM//TESTm8r-s-00.sconsign.dbhash
-rw-r----- 1 agirard agirard 2290 Jan 6 15:23 /gpfs/lb/sets/geop/scratch/agirard/SLURM//TESTm8r-s-00.err
[agirard@mio001 05_Seismic_Modelling]$
```

## The LOG file

(has the same information that would be output to terminal if you ran scons)

Can view with vim or by following it during execution:

```
tail -f /gpfs/lb/sets/geop/scratch/agirard/SLURM/TESTm8r-s-00.out
```

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## The ERROR file

(all warning log information)

Not important unless you find an error, but will allow for debugging!!!