

GHPC Cheat Sheet

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Connecting to Console[1,2]

Connecting Via SSH

AU User *	External User
console2.ghpc.au.dk	console1.ghpc.au.dk

* - Only works if you're in AU or Eduroam

Transferring files to/from GHPC

GUI: WINSCP or CyberDUCK are supported.

CLI: scp and rsync are supported.

Environment Variables

PBS	Slurm	Meaning
\$PBS_JOBID	\$SLURM_JOB_ID	Job id for use within scripts
\$PBS_O_WORKDIR	\$SLURM_SUBMIT_WORKDIR	Directory where the job was submitted from

Command to convert PBS to Slurm:

```
sed -i -e 's/$PBS_JOBID/$SLURM_JOB_ID/g'
-e 's/$PBS_O_WORKDIR/$SLURM_SUBMIT_DIR/g' FILENAME
```

Wrapper Scripts

Running SAS scripts on cluster

```
rsas vandalay.sas
rsas -q nav -c 4 -m 40g -l vandalay vandalay.sas
```

Submit DMU5 or DMU4 job to cluster

```
rdmu5 vandalay
rdmu5 -q ghpc -c 4 -m 40g vandalay
rdmu4 -q ghpc -c 4 -m 40g vandalay
```

Submit DMUAI job to cluster - rdmuai

```
rdmuai vandalay
rdmuai -q ghpc -c 4 -m 40g vandalay
```

Submit GZIP (de)compression job to cluster

```
rgzip -q ghpc -c 4 -m 40g FILE1 PATTERN*
rgunzip -q ghpc -c 4 -m 40g FILE1 PATTERN*
```

Batch job on Slurm

```
#!/bin/bash
#-----#
# Edit Job specifications #
#-----#
#SBATCH -p ghpc #Name of the queue
#SBATCH -N 1 #Number of nodes(DO NOT CHANGE)
#SBATCH -n 1 #Number of CPU cores
#SBATCH --mem=1024 #Memory in MiB(10 GiB = 10*1024MiB)
#SBATCH -J template_job #Name of the job
#SBATCH --output=slurm_%x_%A.out #STDOUT
#SBATCH --error=slurm_%x_%A.err #STDERR
#SBATCH -t 1:00:00 #Job max time
#Time Format = MM or MM:SS or HH:MM:SS or DD-HH or DD
HH:MM
#Create a temporary directory for the job in local storage#
TMPDIR=/scratch/$USER/$SLURM_JOBID
export TMPDIR
mkdir -p $TMPDIR
#-----#
# Your job script #
#-----#
#Replace the following with your work to be executed.
echo "Job started at $(date '+%d_%m_%y_%H_%M_%S')"
```

Submit batch job to Slurm

```
sbatch <jobscript filename.sh>
sbatch -p queue name -n 10 --mem=20g FILE.sh
```

Common options to SBATCH and SRUN

Option	purpose
-p	Name of partition/queue
--mem	Maximum memory limit
-n	Number of CPU cores
-o	File to write stdout to
-e	File to write stderr to
-t	Maximum run time limit for job

Interactive Bash, R Julia, Python

```
srun -n 4 --mem=1024 -t 1:00:00 -J Test --pty bash
srun -n 4 --mem=1024 -t 1:00:00 -J Test --pty R
srun -n 4 --mem=1024 -t 1:00:00 -J Test --pty julia
srun -n 4 --mem=1024 -t 1:00:00 -J Test --pty python3
```

Details of job(s)

Command	purpose
myst	list of all my active & pending jobs
navst	Status of all NAV jobs
sj <jobID>	Status of a job
saj	Status of all jobs
sajt	Status of all jobs in past 24 hours
scontrol show job <jobID>	Detailed status of a running job

Actions on a job

Command	purpose
scancel <jobID>	Cancel a pending/-running job.
scontrol update jobid=<jobID> partition=<partition name>	Move a pending job to another queue/-partition.

View Cluster resources

ghpcinfo

Queues/Partition in GHPC

Queue	purpose
ghpc	Default queue(Cascadelake & Skylake)
zen4	New AMD EPYC servers
nav / nav_zen4	Queue for NAV users

Resource Limits

Limit	Value
Max # of cores at a time per user	72
Max memory at a time per user	768 GiB
Max # of cores per job [ghpc,nav]	32
Max # of cores per job [zen4, nav_zen4]	128
Max memory per job [zen4, nav_zen4]	1.5 TiB

Wiki / User Guide

<https://wiki.ghpc.au.dk/>