Aspire2A Setup

Connect to Aspire2A

1. Download VPN from from https://support.checkpoint.com/results/download/122319, follow installation guideline from https://help.nscc.sg/wp-content/uploads/ASPIRE2A_VPN_WINDOWS_v1.pdf.
2. Open the vpn, Connect to 103.72.192.1, use NSCC_LDAP (auth), press finish.
3. Open the installed Check Point Endpoint Security, connect vpn using the credentials:

```
apacsc34
WvWE1NSLgUvae
```

4. Ask the DUO app code form Jermin.
5. SSH

```
ssh -Y apacsc34@aspire2a.nscc.sg
password: WvWE1NSLgUvae
```

Aspire 2A Guide

https://help.nscc.sg/wp-content/uploads/2024/05/ASPIRE2A-General-Quickstart-Guide.pdf

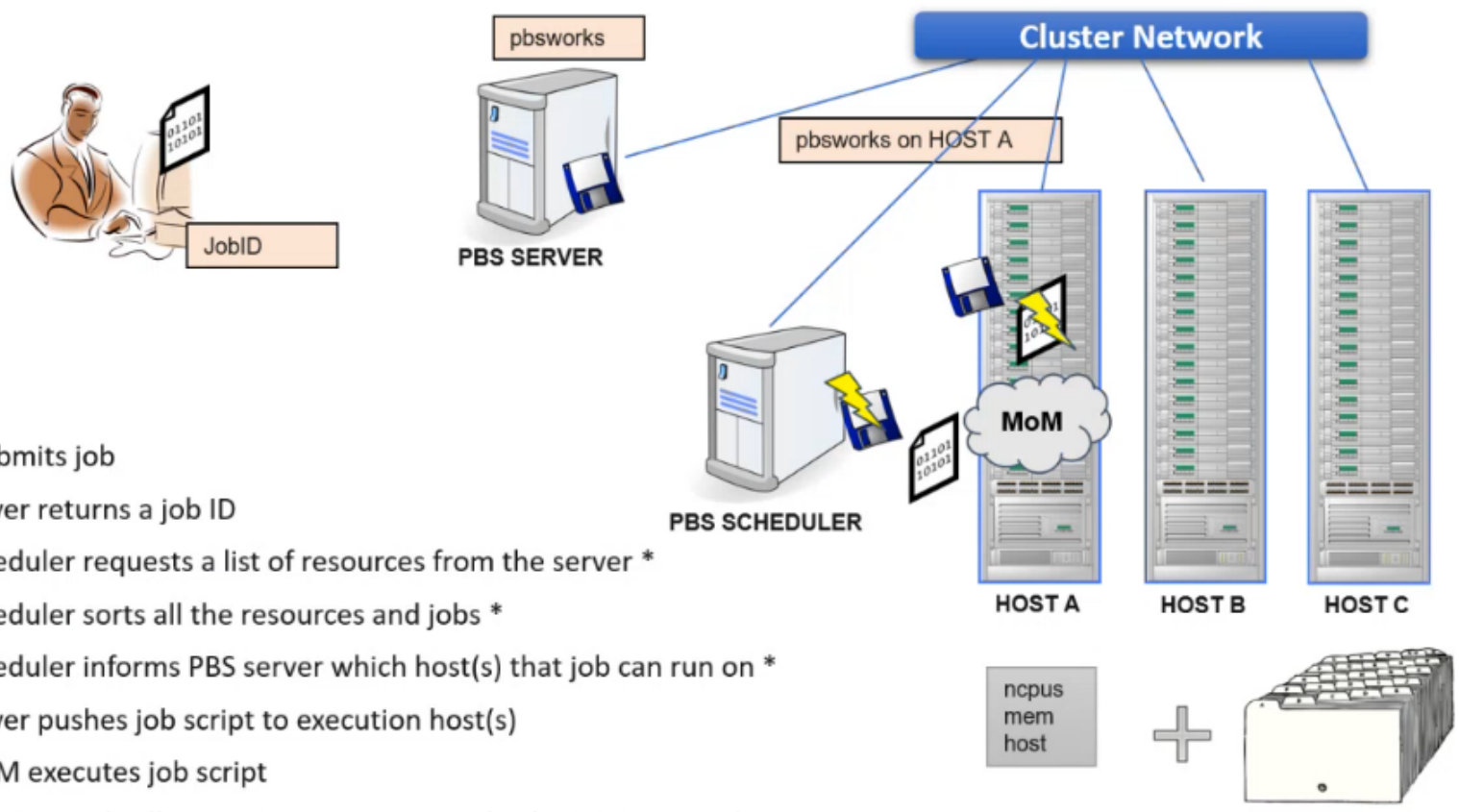
Aspire2A Important Commands

```
# Access scratch directory via default symbolic link.
cd ~/scratch/

myprojects
myusage
myquota

module avail
module avail gcc
module avail -S gcc

module show python/3.11.3-gcc10
module list
module load python/3.11.3-gcc10
module list
which python3
python3 -V
module rm python/3.11.3-gcc10

cd 01-mpi
cat setvars.sh
source setvars.sh
module list
vi hello-mpi.c
which mpicc
cat Makefile
make
ldd appc
ldd appf
make info
make verbose
module swap PrgEnv-intel PrgEnv-gnu
make info
make
ldd appc

cd 02-openacc
cat setvars.sh
```

```
source setvars.sh
module list
cc -V
which nvcc
vi hello-acc.c
cat Makefile
make
ldd appc
make info
make verbose

cd 03-pbs/01-cpu
cat setvars.sh
source setvars.sh
module list
vi hello-mpi-omp.c
make
./hello-cpu
vi submit-cpu.sh
qsub submit-cpu.sh
qstat -aw
qstat -awx
qstat -fw  JOBID
qstat -fwx JOBID
vi HelloMPI.o*
vi out-run.txt

cd 03-pbs/02-gpu
cat setvars.sh
source setvars.sh
module list
make
vi submit-gpu.sh
qsub submit-gpu.sh
vi HelloGPU.o*

# Command to check the GPU node status.
pbsnodes -aSj | head
pbsnodes -aSj | grep x1000c[0-3]

# PBS directives for email notifications.
#PBS -m abe
#PBS -M YOUR_EMAIL_TO_NOTIFY

# PBS directive to join stdout and stderr.
#PBS -j oe

# PBS directives to set the output files for stdout and stderr.
#PBS -o out-stdout.txt
#PBS -e out-stderr.txt
```

Workflow

ASPIRE 2A – PBS Job Scheduler



1. User submits job
2. PBS server returns a job ID
3. PBS scheduler requests a list of resources from the server *
4. PBS scheduler sorts all the resources and jobs *
5. PBS scheduler informs PBS server which host(s) that job can run on *
6. PBS server pushes job script to execution host(s)
7. PBS MoM executes job script
8. PBS MoM periodically reports resource usage back to PBS server *
9. When job is completed PBS MoM copies output and error files
10. Job execution completed/user notification sent

Note: * This information is for debugging purposes only. It may change in future releases.