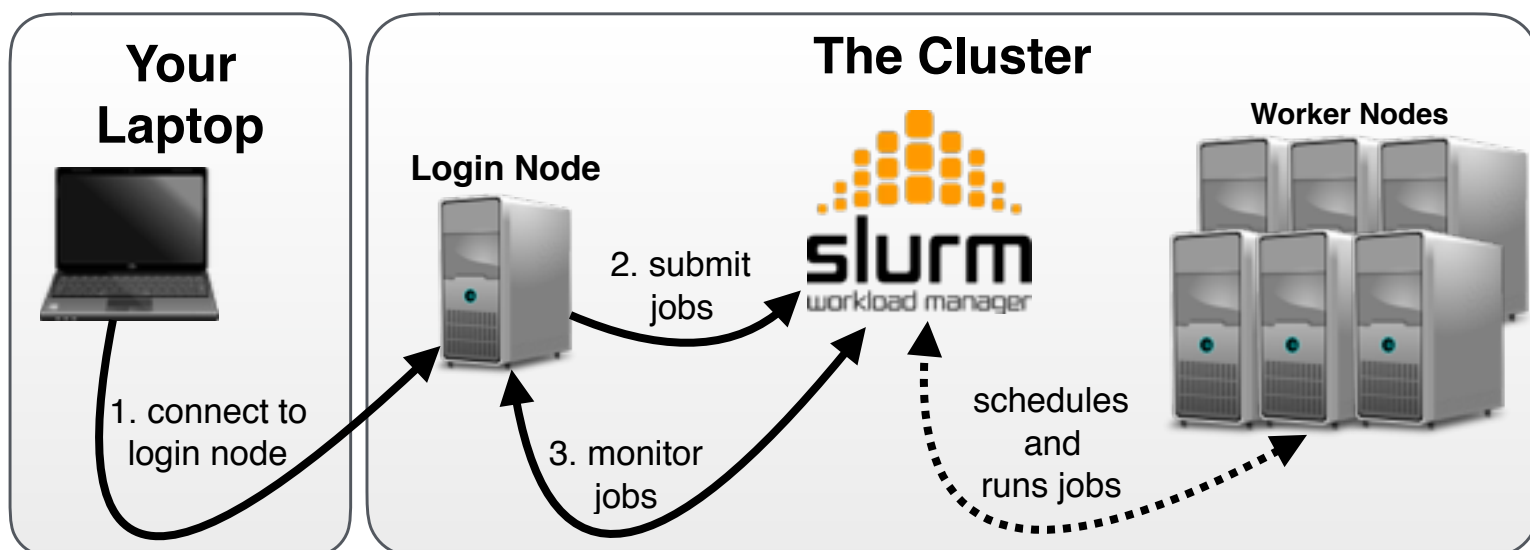


Running Programs on the HARDAC Cluster



Connect to Login Node

Open Terminal or Git Bash and enter the following:

```
ssh <netid>@hardac-login.genome.duke.edu
```

Enter your password. Then you should see the hardac-login prompt.

You must be on the medicine network!!!



Submit Jobs

Run a job and wait

```
srun <command and args>
```

The output will be printed once the command finishes.

Run an interactive job

This allows you to run multiple commands sequentially without repeating srun.

```
srun --pty bash -i
```

Run an array batch job

Create a bash script containing your commands and special comments that configure how your command is run.

Create a text file with the following contents:

```
#!/usr/bin/env bash
#SBATCH --mail-type=END
#SBATCH --mail-user=<email>
#SBATCH --mem 4000
#SBATCH --array=0-7
<command and args>
<other_command and args>
```

- ← Required line or Slurm will error out
- ← Send an email when job completes
- ← Email address to send to
- ← Each task gets 4G memory
- ← run 8 jobs passing the unique number from 0-7 to each job in the \$SLURM_ARRAY_TASK_ID environment variable. Add %4 after 0-7 to only run 4 at a time.

Monitor Jobs

View currently running jobs

```
squeue -u <netid>
```

View finished jobs since midnight

```
sacct
```

Add `-S <date>` and `sacct` will look for jobs finished on or after that date.

Cancel a running job

```
scancel <jobid>
```

Replace `<jobid>` with `-u <netid>` to cancel all jobs for your user.

Submit your array batch job on a partition in the cluster.
(We used partition common in the class)

```
sbatch -p <partition> <myscript.sh>
```

You should see your jobid printed out.
Any output from your commands will be directed to `slurm-jobid*.out`.

See all sbatch options:

```
sbatch --help
```

Copy files

Open Terminal or Git Bash and enter the following:

```
scp <filename> <netid>@hardac-xfer.genome.duke.edu:<filename>
```

Copies the file from your laptop to your home directory on HARDAC.
Reverse the order of the arguments to copy from HARDAC to your laptop.