

# NTUEE HPC Slurm Quick User Guide

## 1. What is Slurm

Slurm is a resource management and job scheduling system used to manage computing resources in an HPC (High Performance Computing) cluster.

Main functions: 1. Allocate computing resources such as CPU. 2. Schedule and manage users' computational tasks. 3. Provide a job queue mechanism

## 2. Log in to the HPC Node

Log in to the login node using SSH: `ssh [your_username]@140.112.170.43 -p 2201`

After entering the default password you received, please change your password immediately. The new password must be at least eight characters long and contain three different types of characters (such as uppercase letters, lowercase letters, numbers, or symbols).

## 3. Common Slurm Commands

### 3.1 Check Cluster Status

View node status:

- `sinfo`

View your own job status:

- `squeue -u [your_username]`

### 3.2 Submit a Job

Create a simple job script `job.sh`:

```
#!/bin/bash
#SBATCH --job-name=test_job    # Job name
#SBATCH --output=output.txt    # Output file name
#SBATCH --ntasks=1            # Number of CPU cores
#SBATCH --time=00:10:00       # Maximum runtime (HH:MM:SS)
#SBATCH --mem=2G              # Memory requirement
#SBATCH --account=[your_username] # Specify your account name
```

```
#SBATCH --partition=short # Based on required runtime: short, standard, or long
#SBATCH --sockets-per-node=1
#SBATCH --hint=nomultithread
```

```
echo "Hello Slurm!"
```

Submit the job:

- `sbatch job.sh`

### 3.3 Monitor Jobs

View your running or queued jobs:

- `squeue -u [your_username]`

View detailed information for a specific job:

- `scontrol show job <job_id>`

View job details and CPU usage time:

- `sacct -u [your_username] --format=JobID,JobName%20,Elapsed,TotalCPU,AllocCPUS,State`

### 3.4 Cancel a Job

- `scancel <job_id>`

## 4. Useful Tips

Interactive job session (for testing or debugging):

- `srun --pty --ntasks=1 --mem=2G --time=00:30:00 --account=[your_username] --partition=short bash`

## 5. Reminders

1. Request only the necessary resources in your job script to avoid wasting cluster resources.
2. The job output file will be stored in the directory where the job was submitted.
3. For any additional requests or questions, please contact [ntueehpc@googlegroups.com](mailto:ntueehpc@googlegroups.com).