Job Submission and Control using SLURM

1. Check queue resources using sinfo command

Task 1: Analyze the output to understand the following

- sinfo -o "%P" - Partition Name: Names of the partitions (queues) available on the cluster.
- sinfo -o "%N" - NODES: Number of nodes available in each partition.
- sinfo -o "%P %T" - STATE: State of the partition (e.g., idle, allocated, down).
- sinfo -o "%c"- CPUS(A/I/O/T): Available/Idle/Other/Total number of CPUs in each partition.
- sinfo -o "%m" - MEMORY: Available memory resources in each partition.
- sinfo --Node –long
- sinfo -N -h -O NODELIST
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and practice scontrol:

- scontrol show nodes
- scontrol show job ID

2. Interactive job submission

Within the interactive session, you can

- Run various commands, execute programs, or perform any tasks as needed to interact with the system, execute programs, or perform computations.
- Specify the required resources such as the number of nodes, CPUs, memory, and duration of the session.

Task 2: run commands /bin/hostname, /bin/hostname > output.txt; ls –l, pwd, etc; srun --pty --nodes=1 --cpus-per-task=4 --time=1:00:00 bash –i; `srun -n1 sleep 1`

3. Batch job submission

Task 3: Write a batch script named job_script.sh that performs the following tasks:

- **Prints the hostname of the compute node where the job is running.**
- **Prints the current date and time.**
- **Lists files in the current directory.**
- **Submit the batch job using the SLURM sbatch command.**
- **Monitor the status of the submitted job using SLURM commands (squeue, sacct, scontrol, etc.).**