

Assignment No 3

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1. You have multiple jobs in the queue, and you want to list only the jobs that are currently pending (not running). How can you do this?
2. You want to monitor the resource usage (e.g., CPU, memory) of a running job. What command can you use to monitor job resource usage in real-time?
3. After a job finishes, you want to check its exit code to know whether it ran successfully. How do you check the exit code of a completed job?

1. List Only Pending Jobs in the Queue

Command: `squeue --state=PD`

```
root@controller: ~/slurm-21.08.8-2/Assignment1
GNU nano 4.8 printHello1000.sh Modified
#!/bin/bash

#SBATCH --output=/tmp/hello_%j.out
#SBATCH --error=/tmp/hello_%j.err
#SBATCH --odelist=compute[1-2]
#SBATCH --ntasks=2 # Request 2 tasks for 2 nodes
#SBATCH --cpus-per-task=1 # Number of CPUs per task

for i in $(seq 1 1000); do
    echo "Hello $i"
    sleep 1 # Sleeping for 1 second for every Hello print
done

File Name to Write: printHello1000.sh
^G Get Help      M-D DOS Format  M-A Append     M-B Backup File
^C Cancel        M-M Mac Format  M-P Prepend    ^T To Files
```

```
Activities Terminal Dec 13 16:57
root@controller: ~/slurm-21.08.8-2/Assignment3
root@controller: ~/slurm-21.08.8-2/Assignment3
38 print5.sh debug root 2 PENDING 0:0
39 print5.sh debug root 2 PENDING 0:0
40 print5.sh debug root 2 PENDING 0:0
41 print5.sh debug root 2 PENDING 0:0
42 print5.sh debug root 2 PENDING 0:0
43 print5.sh debug root 2 PENDING 0:0
44 print4.sh debug root 2 PENDING 0:0
45 print4.sh debug root 2 PENDING 0:0
46 print3.sh debug root 2 PENDING 0:0
47 print3.sh debug root 2 PENDING 0:0
48 print3.sh debug root 2 PENDING 0:0
root@controller:~/slurm-21.08.8-2/Assignment3# squeue --state=PENDING
      JOBID PARTITION  NAME      USER  ST      TIME  NODES NODELIST(REASON)
      36      debug  print5.s  root  PD       0:00      2 (Resources)
      37      debug  print5.s  root  PD       0:00      2 (Priority)
      38      debug  print5.s  root  PD       0:00      2 (Priority)
      39      debug  print5.s  root  PD       0:00      2 (Priority)
      40      debug  print5.s  root  PD       0:00      2 (Priority)
      41      debug  print5.s  root  PD       0:00      2 (Priority)
      42      debug  print5.s  root  PD       0:00      2 (Priority)
      43      debug  print5.s  root  PD       0:00      2 (Priority)
      44      debug  print4.s  root  PD       0:00      2 (Priority)
      45      debug  print4.s  root  PD       0:00      2 (Priority)
      46      debug  print3.s  root  PD       0:00      2 (Priority)
      47      debug  print3.s  root  PD       0:00      2 (Priority)
      48      debug  print3.s  root  PD       0:00      2 (Priority)
root@controller:~/slurm-21.08.8-2/Assignment3#
```

2. Monitor Resource Usage of a Running Job in Real-Time

Command: `sstat -j <job_id> format=JobID,MaxRSS,MaxCPU,State`

```
Activities Terminal Dec 13 17:07
root@controller: ~/slurm-21.08.8-2/etc
root@controller: ~/slurm-21.08.8-2/etc
GNU nano 4.8 slurm.conf Modified
# LOGGING AND ACCOUNTING
#AccountingStorageEnforce=0
#AccountingStorageHost=
#AccountingStoragePass=
#AccountingStoragePort=
AccountingStorageType=accounting_storage/slurmdbd
#AccountingStorageUser=
#AccountingStorageFlags=
#JobCompHost=
#JobCompLoc=
#JobCompPass=
#JobCompPort=
JobCompType=jobcomp/none
#JobCompUser=
#JobContainerType=job_container/none
JobAcctGatherFrequency=30
JobAcctGatherType=task
#JobAcctGatherType=jobacct_gather/none
SlurmctldDebug=info
SlurmctldLogFile=/var/log/slurmctld.log
SlurmdDebug=info
SlurmdLogFile=/var/log/slurmd.log
#SlurmSchedLogFile=
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos M-U Undo M-A Mark Text
^X Exit ^R Read File ^_ Replace ^U Paste Text ^T To Spell ^G Go To Line M-E Redo M-G Copy Text
```

```
Activities Terminal Dec 13 17:36
root@controller: ~/slurm-21.08.8-2/Assignment3
root@controller: ~/slurm-21.08.8-2/Assignment3
root@controller: ~/slurm-21.08.8-2/Assignment3
45 debug print4.s root PD 0:00 2 (Priority)
46 debug print3.s root PD 0:00 2 (Priority)
47 debug print3.s root PD 0:00 2 (Priority)
48 debug print3.s root PD 0:00 2 (Priority)
36 debug print5.s root R 0:22 2 compute2,controller
37 debug print5.s root R 0:19 2 compute2,controller
38 debug print5.s root R 0:15 2 compute2,controller
39 debug print5.s root R 0:12 2 compute2,controller
root@controller:~/slurm-21.08.8-2/Assignment3# sstat -j 39 --format=JobID,MaxRSS,MaxVMSize,CPUTime
sstat: error: Invalid field requested: "CPUTime"
root@controller:~/slurm-21.08.8-2/Assignment3# sstat -j 39 --format=JobID,MaxRSS,MaxVMSize
JobID MaxRSS MaxVMSize
-----
root@controller:~/slurm-21.08.8-2/Assignment3# sstat -j 39
JobID MaxVMSize MaxVMSizeNode MaxVMSizeTask AveVMSize MaxRSS MaxRSSNode MaxRSSTask AveRSS MaxPages MaxPa
gesNode MaxPagesTask AvePages MinCPU MinCPUNode MinCPUTask AveCPU NTasks AveCPUFreq ReqCPUFreqMin ReqCPUFreqM
ax ReqCPUFreqGov ConsumedEnergy MaxDiskRead MaxDiskReadNode MaxDiskReadTask AveDiskRead MaxDiskWrite MaxDiskWriteNode Max
DiskWriteTask AveDiskWrite TRESUsageInAve TRESUsageInMax TRESUsageInMaxNode TRESUsageInMaxTask TRESUsageInMin TRESUsageInMi
nNode TRESUsageInMinTask TRESUsageInTot TRESUsageOutAve TRESUsageOutMax TRESUsageOutMaxNode TRESUsageOutMaxTask TRESUsageOu
tMin TRESUsageOutMinNode TRESUsageOutMinTask TRESUsageOutTot
-----
root@controller:~/slurm-21.08.8-2/Assignment3#
```

```
Activities Terminal Dec 13 17:40
root@controller: ~/slurm-21.08.8-2/Assignment3
root@controller: ~/slurm-21.08.8-2/Assignment3
root@controller: ~/slurm-21.08.8-2/Assignment3
root@controller:~/slurm-21.08.8-2/Assignment3# sstat -j -a 39
sstat: fatal: Bad job/step specified: -a
root@controller:~/slurm-21.08.8-2/Assignment3# sstat -j 39 -a
JobID MaxVMSize MaxVMSizeNode MaxVMSizeTask AveVMSize MaxRSS MaxRSSNode MaxRSSTask AveRSS MaxPages MaxPa
gesNode MaxPagesTask AvePages MinCPU MinCPUNode MinCPUTask AveCPU NTasks AveCPUFreq ReqCPUFreqMin ReqCPUFreqM
ax ReqCPUFreqGov ConsumedEnergy MaxDiskRead MaxDiskReadNode MaxDiskReadTask AveDiskRead MaxDiskWrite MaxDiskWriteNode Max
DiskWriteTask AveDiskWrite TRESUsageInAve TRESUsageInMax TRESUsageInMaxNode TRESUsageInMaxTask TRESUsageInMin TRESUsageInMi
nNode TRESUsageInMinTask TRESUsageInTot TRESUsageOutAve TRESUsageOutMax TRESUsageOutMaxNode TRESUsageOutMaxTask TRESUsageOu
tMin TRESUsageOutMinNode TRESUsageOutMinTask TRESUsageOutTot
-----
39.batch
0 0 0 213503982+ 0 0 0
root@controller:~/slurm-21.08.8-2/Assignment3# sstat -j 39 --format=JobID,MaxRSS,MaxVMSize -a
JobID MaxRSS MaxVMSize
-----
39.batch
root@controller:~/slurm-21.08.8-2/Assignment3#
```

3. Check the Exit Code of a Completed Job

Command: `sacct -j <job_id> --format=JobID,State,ExitCode`

[illegible]