

# Scheduler Commands

# jobinfo -j

```
[kamil@jasper ~]$ jobinfo -j
```

<b>JobID</b>	<b>State</b>	<b>Proc</b>	<b>WCLimit</b>	<b>User</b>	<b>Opsys</b>	<b>Class</b>	<b>Features</b>
4534909	Running	1	3:00:00:00	kamil	-	batch	-
4533685	Idle	12	8:00:00	kamil	-	batch	-
4533540	Idle	12	8:00:00	kamil	-	batch	-
4533615	Idle	12	8:00:00	kamil	-	batch	-
4533632	Idle	12	8:00:00	kamil	-	batch	-
4533639	Idle	12	8:00:00	kamil	-	batch	-
4533657	Idle	12	8:00:00	kamil	-	batch	-
4533679	Idle	12	8:00:00	kamil	-	batch	-
4533686	Idle	12	8:00:00	kamil	-	batch	-

# qstat -t -u \$USER

```
[kamil@jasper ~]$ qstat -t -u kamil
```

```
jasper-usradm.westgrid.ca:
```

Job ID	Username	Queue	Jobname	SessID	NDS	TSK	Req'd Memory	Req'd Time	S	Elap Time
4533749[349].jasper-us	kamil	batch	"sumrate"-349	--	1	1	20024	24:59:00	Q	--
4533749[350].jasper-us	kamil	batch	"sumrate"-350	--	1	1	20024	24:59:00	Q	--
4533749[351].jasper-us	kamil	batch	"sumrate"-351	--	1	1	20024	24:59:00	Q	--
4533749[352].jasper-us	kamil	batch	"sumrate"-352	32041	1	1	20024	24:59:00	R	09:40:14
4533749[353].jasper-us	kamil	batch	"sumrate"-353	2707	1	1	20024	24:59:00	R	09:40:14
4533749[354].jasper-us	kamil	batch	"sumrate"-354	29424	1	1	20024	24:59:00	R	09:40:13
4533749[355].jasper-us	kamil	batch	"sumrate"-355	29510	1	1	20024	24:59:00	R	09:40:12
4533749[356].jasper-us	kamil	batch	"sumrate"-356	22401	1	1	20024	24:59:00	R	09:40:12

# qstat -a

```
hungabee:~ # qstat -a
```

```
hungabee:
```

Job ID	Username	Queue	Jobname	SessID	NDS	Req'd TSK	Req'd Memory	Elap Time	S	Time
25571.hungabee	fujinaga	hall	Alliaria.RunAllP	909496	1	--	--	72:00	R	32:30
25618.hungabee	fujinaga	hall	Lythrum.RunAllPa	--	1	--	--	72:00	Q	--
25620.hungabee	tmah	hall	Nektar_job_3D	909925	1	--	314496	72:00	R	31:52
25621.hungabee	tmah	hall	Nektar_job_3D	--	1	--	314496	72:00	Q	--
25639.hungabee	tmah	hiru	cakile.abysalt.	929964	1	--	--	72:00	R	17:19
25640.hungabee	jyang	hiru	runscript.hungab	930622	1	--	--	24:00	R	14:56
25647.hungabee	jyang	hiru	runscript.hungab	955951	1	--	--	24:00	R	11:17
25658.hungabee	kamil	hiru	f_rpx10_c64_f100	979724	1	--	--	12:00	R	06:22
25659.hungabee	kamil	hiru	f_rpx10_c128_f10	979813	1	--	--	12:00	R	06:22
25660.hungabee	kamil	iru	f_rpx10_c256_f10	--	1	--	--	12:00	Q	--
25663.hungabee	tmcguire	hiru	E1e4eta70N3	100673	1	--	--	08:00	R	01:04

# qstat -r

```
hungabee:~ # qstat -r
```

```
hungabee:
```

Job ID	Username	Queue	Jobname	SessID	NDS	TSK	Req'd Memory	Req'd Time	Elap S	Time
25571.hungabee	fujinaga	hall	Alliaria.RunAllP	909496	1	--	--	72:00	R	32:30
25620.hungabee	tmah	hall	Nektar_job_3D	909925	1	--	314496	72:00	R	31:52
25639.hungabee	tmah	hiru	cakile.abysalt.	929964	1	--	--	72:00	R	17:19
25640.hungabee	jyang	hiru	runscript.hungab	930622	1	--	--	24:00	R	14:56
25647.hungabee	jyang	hiru	runscript.hungab	955951	1	--	--	24:00	R	11:17
25658.hungabee	kamil	hiru	f_rpx10_c64_f100	979724	1	--	--	12:00	R	06:22
25659.hungabee	kamil	hiru	f_rpx10_c128_f10	979813	1	--	--	12:00	R	06:22
25663.hungabee	tmcguire	hiru	E1e4eta70N3	100673	1	--	--	08:00	R	01:04

# showq

hungabee:~ # showq

## active jobs-----

JOBID	USERNAME	STATE	PROCS	REMAINING	STARTTIME
25658	fujinaga	Running	64	5:11:32	Thu Apr 10 03:51:16
25663	kamil	Running	64	6:29:27	Thu Apr 10 09:09:11
25571	tmcguire	Running	512	1:15:03:42	Wed Apr 9 01:43:26

4 active jobs            640 of 2048 processors in use by local jobs (31.25%)  
                          80 of 256 nodes active            (31.25%)

## eligible jobs-----

JOBID	USERNAME	STATE	PROCS	WCLIMIT	QUEUETIME
25660	fujinaga	Idle	256	12:00:00	Thu Apr 10 03:51:27

1 eligible jobs

## blocked jobs-----

JOBID	USERNAME	STATE	PROCS	WCLIMIT	QUEUETIME
25680	jyang	Deferred	1	3:00:00:00	Thu Apr 10 10:35:37

1 blocked jobs

Total jobs: 5

# showq -b

```
[root@jasper etc]# showq -b
```

blocked jobs-----

JOBID	USERNAME	STATE	PROCS	WCLIMIT		QUEUETIME
4508818	fujinaga	BatchHold	1	1:12:00:00	Fri Apr	4 07:15:33
4508848	fujinaga	BatchHold	1	1:12:00:00	Fri Apr	4 07:15:40
4508849	fujinaga	BatchHold	1	1:12:00:00	Fri Apr	4 07:15:40
4508851	fujinaga	BatchHold	1	1:12:00:00	Fri Apr	4 07:15:41
4508891	fujinaga	BatchHold	1	1:12:00:00	Fri Apr	4 07:15:51
4508910	fujinaga	BatchHold	1	1:12:00:00	Fri Apr	4 07:15:55
4515387[74]	tmcguire	Idle	5	3:00:00:00	Sat Apr	5 12:27:59
4522606	jyang	Deferred	12	00:01:00	Mon Apr	7 11:52:34
4522614	jyang	Deferred	12	00:01:00	Mon Apr	7 11:58:07
4523361	tmah	Deferred	4	3:00:00:00	Mon Apr	7 15:07:24

...

3426 blocked jobs

Total jobs: 3426

# jobinfo -i or showq -i

```
[root@jasper etc]# showq -i
```

eligible jobs-----

JOBID	PRIORITY	XFACTOR	Q	USERNAME	GROUP	PROCS	WCLIMIT	CLASS	SYSTEMQUEUE	TIME
4534230*	10435	1.1	-	fujinaga	fujinaga	16	10:30:00	batch	Thu Apr 10	10:11:42
4534231*	10432	1.1	-	fujinaga	fujinaga	16	10:30:00	batch	Thu Apr 10	10:11:42
4533750[482]*	9491	1.4	-	kamil	kamil	1	1:00:59:00	batch	Thu Apr 10	00:25:08
4533750[404]*	9474	1.4	-	kamil	kamil	1	1:00:59:00	batch	Thu Apr 10	00:25:08
4533750[405]*	9470	1.4	-	kamil	kamil	1	1:00:59:00	batch	Thu Apr 10	00:25:08
4533184*	-1122	1.3	-	jyang	jyang	12	3:00:00:00	batch	Wed Apr 9	15:31:32
4534262*	-1133	1.2	-	tmcguire	tmcguire	8	2:00:00	batch	Thu Apr 10	10:27:59
4533181*	-1182	1.3	-	jyang	jyang	12	3:00:00:00	batch	Wed Apr 9	15:31:09
4533188[539]*	-82797	1.3	-	tmah	tmah	5	3:00:00:00	batch	Wed Apr 9	15:36:01

9 eligible jobs

Total jobs: 9



# qstat -f

```
[kamil@cl2n234 testwrapper]$ qstat -f 508.cl2n234
Job Id: 508.cl2n234
  Job_Name = partest-lq.pbs
  Job_Owner = kamil@cl2n234
  job_state = Q
  queue = parallel
  server = cl2n234
  Checkpoint = u
  ctime = Thu Apr 10 13:15:43 2014
  Error_Path = cl2n234:/lustre/home/kamil/test/pbs/jasper/testwrapper/partes
               t-lq.pbs.e508
  Hold_Types = n
  Join_Path = n
  Keep_Files = n
  Mail_Points = abe
  Mail_Users = kamil@ualberta.ca
  mtime = Thu Apr 10 13:15:43 2014
  Output_Path = cl2n234:/lustre/home/kamil/test/pbs/jasper/testwrapper/partes
                t-lq.pbs.o508
  Priority = 0
  qtime = Thu Apr 10 13:15:43 2014
```

# qstat -f (continued)

```
Rerunable = True
Resource_List.nodect = 1
Resource_List.nodes = 1:ppn=12
Resource_List.pmem = 256mb
Resource_List.walltime = 03:00:00
Shell_Path_List = /bin/sh
Variable_List = PBS_O_QUEUE=parallel,PBS_O_HOME=/home/kamil,
  PBS_O_LOGNAME=kamil,
  PBS_O_PATH=/usr/kerberos/bin:/usr/local/bin:/bin:/usr/bin:/lustre/jas
  per/software/jobinfo/jobinfo//bin:/opt/sgi/sgimc/bin:/opt/moab/moab-ve
  rsion/bin:/opt/moab/moab-version/sbin:/var/spool/torque/torque-version
  /bin,PBS_O_MAIL=/var/spool/mail/kamil,PBS_O_SHELL=/bin/bash,
  PBS_O_LANG=en_US.UTF-8,
  PBS_O_WORKDIR=/lustre/home/kamil/test/pbs/jasper/testwrapper,
  PBS_O_HOST=cl2n234,PBS_O_SERVER=cl2n234
etime = Thu Apr 10 13:15:43 2014
submit_args = partest-lq.pbs
fault_tolerant = False
job_radix = 0
submit_host = cl2n234
```

# checkjob <jobid>

```
[root@cl2n234 torque-setup]# checkjob 508  
job 508
```

AName: partest-lq.pbs

State: **Idle**

Creds: user:**kamil** group:**kamil** account:**ndz-983-aa** class:**parallel**

WallTime: **00:00:00 of 3:00:00**

BecameEligible: **Thu Apr 10 13:18:14**

SubmitTime: **Thu Apr 10 13:15:43**

(Time Queued Total: **00:20:16** Eligible: **00:20:08**)

TemplateSets: DEFAULT

NodeMatchPolicy: EXACTNODE

Total Requested Tasks: **12**

# checkjob <jobid> (continued)

Req[0] TaskCount: 12 Partition: ALL  
Memory >= 256M Disk >= 0 Swap >= 0  
Dedicated Resources Per Task: **PROCS: 1 MEM: 256M**

SystemID: Moab  
SystemJID: **508**  
Notification Events: **JobStart,JobEnd,JobFail** Notification Address:  
**kamil@ualberta.ca**

Flags: RESTARTABLE  
Attr: checkpoint  
StartPriority: **-88787**  
cl2n236 available: 12 tasks supported  
cl2n235 available: 12 tasks supported  
NOTE: job can run in partition torque (24 procs available 12 procs  
required)

# Checkjob -v -v <jobid>

```
[kamil@jasper ~]$ checkjob -v -v 4535115
job 4535115 (RM job '4535115.jasper-usradm.westgrid.ca')
AName: jRC.egsinp_w193
State: Idle
Creds: user:kamil group:kamil account:cas-124-aa class:batch
WallTime: 00:00:00 of 1:06:00:00
SubmitTime: Thu Apr 10 13:31:02
  (Time Queued Total: 00:08:04 Eligible: 00:00:10)
```

```
TemplateSets: DEFAULT
NodeMatchPolicy: EXACTNODE
Total Requested Tasks: 1
Total Requested Nodes: 1
```

```
Req[0] TaskCount: 1 Partition: ALL
Memory >= 2048M Disk >= 0 Swap >= 0
Available Memory >= 0 Available Swap >= 0
Dedicated Resources Per Task: PROCS: 1 MEM: 2048M SWAP: 2048M
NodeSet=ONEOF:FEATURE:X5675-QDR:X5675-DDR:L5420-DDR
NodeCount: 1
```

```
SystemID: Moab
SystemJID: 4535115
Notification Events: JobFail
```

# Checkjob -v -v <jobid> (continued)

```
UMask:          0000
OutputFile:     jasper.westgrid.ca:/home/kamil/EGSsrc/codes/dosxyznrc_noB/
ProfilePhantom02IC10_10x10_Emean5_9MeVMonoAltPrimColModFFMT50Ang08KMNRC.egsinp_w193.eo
ErrorFile:     jasper.westgrid.ca:/home/kamil/EGSsrc/codes/dosxyznrc_noB/
ProfilePhantom02IC10_10x10_Emean5_9MeVMonoAltPrimColModFFMT50Ang08KMNRC.egsinp_w193.eo
EnvVariables:  PBS_O_QUEUE=batch,PBS_O_HOME=/home/
kamil,PBS_O_LOGNAME=kamil,PBS_O_PATH=/home/kamil/EGSsrc/codes/bin/x86_64-unknown-linux-
gnu-f95:/home/kamil/EGSsrc/bin/x86_64-unknown-linux-gnu-f95:/usr/kerberos/bin:/usr/
local/bin:/bin:/usr/bin:/usr/bin:/lustre/jasper/software/jobinfo/jobinfo//bin:/opt/sgi/
sgimc/bin:/opt/moab/moab-version/bin:/opt/moab/moab-version/sbin:/var/spool/torque/
torque-version/bin,PBS_O_MAIL=/var/spool/mail/kamil,PBS_O_SHELL=/bin/
bash,PBS_O_LANG=en_US.UTF-8,PBS_O_WORKDIR=/lustre/home/kamil/EGSsrc/codes/
dosxyznrc_noB,PBS_O_HOST=jasper.westgrid.ca,PBS_O_SERVER=jasper-usradm.westgrid.ca
Partition List: [ALL]
SrcRM:         jasper-usradm  DstRM: jasper-usradm  DstRMJID: 4535115.jasper-
usradm.westgrid.ca
Submit Args:   -j eo -l pmem=2gb,vmem=2gb -e
ProfilePhantom02IC10_10x10_Emean5_9MeVMonoAltPrimColModFFMT50Ang08KMNRC.egsinp_w193.eo -
N jRC.egsinp_w193 -l walltime=30:00:00
Flags:        RESTARTABLE
Attr:         checkpoint
StartPriority: -11066
Priority Analysis:
Job           PRIORITY*   Cred(Class)   FS(Accnt)   Serv(QTime)
Weights      -----
4535115      -11067      0.0( 0.0) 100.0(-11.1) 0.0( 0.0)
PE:          1.00
Node Availability for Partition jasper-usradm -----
```

# Checkjob -v -v <jobid> (continued)

Node Availability for Partition jasper-usradm -----

cl1n001	rejected: Reserved (wlcg_ops1.69217)	allocationpriority=0.00
cl1n002	rejected: Reserved (wlcg_ops2.69218)	allocationpriority=0.00
cl2n002	rejected: Memory	allocationpriority=0.00
cl2n003	rejected: Memory	allocationpriority=0.00
cl2n028	rejected: State (Busy)	allocationpriority=0.00
cl2n029	rejected: State (Busy)	allocationpriority=0.00
cl2n030	rejected: Memory	allocationpriority=0.00
cl2n031	rejected: Memory	allocationpriority=0.00

...

NOTE: job req cannot run in partition jasper-usradm (available procs do not meet requirements : 0 of 1 procs found)  
idle procs: 354 feasible procs: 0

Node Rejection Summary: [Memory: 128][State: 284][Reserved: 4]

BLOCK MSG: job 4535115 violates idle HARD MAXIJOB limit of 5 for user kamil  
partition ALL (Req: 1 InUse: 5) (recorded at last scheduling iteration)

# jobinfo -f

```
[kamil@jasper ~]$ jobinfo -f
Share Tree Overview for partition 'ALL'
Name                Usage      Target      (FSFACTOR)
-----
- westgrid          4100.00    4100.00    of 4100.00 (node: 4274626401.16) (0.00)
  - ndz-983-ab      44.81      0.97      of 4100.00 (acct: 46192399.80) (-14.29)
    - kamil         0.00      33.33     of 100.00 (user: 0.00) (-13.85)
    - jyang         95.52     33.33     of 100.00 (user: 44124561.07) (-15.10)
    - tmah          4.48      33.33     of 100.00 (user: 2067838.73) (-13.91)
```

Here we see that accounting group **ndz-983-ab** has used weighted average of **44.81** cores while only having a target of **0.97** cores. Of the total resources used by the group **95.52 %** were used by user **jyang** who was only allocate **33.33%** of the groups target.



# Historical usage and Group Status: jobinfo -v -f

```
[kamil@jasper ~]$ jobinfo -v -f
FairShare Information
```

```
Depth: 15 intervals   Interval Length: 2:00:00:00   Decay Rate: 0.90
```

```
FS Policy: DEDICATEDPS%
System FS Settings: Target Usage: 0.00
```

FSInterval	%	Target	0	1	2	3	4	5	6	7	8	9	10
FSWeight	-----	-----	1.0000	0.9000	0.8100	0.7290	0.6561	0.5905	0.5314	0.4783	0.4305	0.3874	0.3486
TotalUsage	100.00	-----	89633.9	208850.1	208427.8	208427.4	208243.2	208981.2	209635.3	209477.7	208477.8	208218.0	207977.0

```
USER
-----
```

USER	%	Target	0	1	2	3	4	5	6	7	8	9	10
jyang	0.80	-----	0.15	0.03	-----	-----	1.80	1.29	1.97	1.90	1.84	1.04	0.52
kamil	0.00	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
tmah	0.04	-----	-----	-----	-----	0.01	0.04	0.04	0.03	0.02	-----	-----	-----

```
ACCT
-----
```

ACCT	%	Target	0	1	2	3	4	5	6	7	8	9	10
ndz-983-aa	0.84	-----	0.15	0.03	-----	0.01	1.84	1.34	2.00	1.92	1.84	1.04	0.52

```
Share Tree Overview for partition 'ALL'
```

Name	Usage	Target		(FSFACTOR)
- westgrid	4100.00	4100.00	of	4100.00 (node: 4275414629.43) (0.00)
- ndz-983-ab	44.35	0.97	of	4100.00 (acct: 46249839.86) (-14.14)
- kamil	0.00	33.33	of	100.00 (user: 0.00) (-13.70)
- jyang	95.53	33.33	of	100.00 (user: 44182001.13) (-14.95)
- tmah	4.47	33.33	of	100.00 (user: 2067838.73) (-13.76)

# jobinfo -a

## Viewing multiple accounting groups and allocations

```
[kamil@jasper ~]$ jobinfo -a
Share Tree Overview for partition 'ALL'
Name                Usage      Target      (FSFACTOR)
-----
- westgrid          4100.00    4100.00    of 4100.00 (node: 4274626401.16) (0.00)
  - ndz-983-aa      0.00       0.97       of 4100.00 (acct: 0.00) (0.31)
    - kamil         0.00       100.00     of 100.00 (user: 0.00) (1.62)
  - ndz-983-ab     44.81      0.97       of 4100.00 (acct: 46192399.80) (-14.29)
    - kamil         0.00       33.33     of 100.00 (user: 0.00) (-13.85)
    - jyang        95.52      33.33     of 100.00 (user: 44124561.07) (-15.10)
    - tmah         4.48       33.33     of 100.00 (user: 2067838.73) (-13.91)
```

- Here we see user kamil is a member of two accounting groups **ndz-983-aa** and **ndz-983-ab**.
- Accounting group **ndz-983-aa** has been an allocated target of **0.97** cores and has used **0**.
- Accounting group **ndz-983-ab** also has an allocation of **0.97** cores but has used **44.81**, mostly by user **jyang**.