

PBS

1 PBS

			batch	old	oldfat	fat	newfat
gpu							
batch							
old	58			24G	cpu		12
		c0101 _ c0142	c0301 _ c0332				
	58						
oldfat	1			125G	cpu		32
		c0401					
fat	3			1T	cpu		40
		fat01	fat02	fat03			
newfat	2			1T	cpu		48
		fat04	fat05				
gpu	1			125G	cpu		20
		gpu01					

2 PBS

PBS 4

1 qsub ——

qsub [-a date_time] [-c interval] [-C directive_prefix]
[-e path] [-l] [-j join] [-k keep] [-l resource_list] [-m mail_options]
[-M user_list][-N name] [-o path] [-p priority] [-q destination]

[-r c][-S path_list] [-u user_list][-v variable_list] [-V]
[-W additional_attributes] [-z]
[script]

2 qstat —

qstat [-f][-a][-i][-n][-s][-R][-Q][-q][-B][-u]

-f	<i>jobid</i>	
-a		
-i		
-n		
-s		scheduler
-R		
-Q		destination id
-q		alternative
-au	<i>userid</i>	
-B		PBS Server
-r		
-Qf	<i>queue</i>	
-u		destination id
		user_list

a)

```
[root@mu01 torque6]# pbsnodes -l free
fat03      free
fat04      free
fat05      free
gpu01      free
c0106      free
c0107      free
c0108      free
c0109      free
c0110      free
c0111      free
c0112      free
c0113      free
c0115      free
c0116      free
c0117      free
```

b)

```
[root@mu01 torque6]# qstat -f 1386
Job Id: 1386.mu01
  Job_Name = work.00035.sh
  Job_Owner = wangwenlab@mu02
  resources_used.cput = 00:00:00
  resources_used.energy_used = 0
  resources_used.mem = 4608kb
  resources_used.vmem = 261920kb
  resources_used.walltime = 16:01:32
  job_state = R
  queue = old
  server = mu01
  Checkpoint = u
  ctime = Mon Apr 16 23:07:20 2018
  Error_Path = mu02:/lustre/home/wangwenlab/yangjie/hudie/fengweidie_project
               /04.correct/homolog/Papilio_machaon.protein.tblastn.shell.22556.qsub/w
               ork.00035.sh.e1386
  exec_host = c0136/0
  Hold_Types = n
  Join_Path = n
  Keep_Files = n
  Mail_Points = a
  mtime = Mon Apr 16 23:07:41 2018
  Output_Path = mu02:/lustre/home/wangwenlab/yangjie/hudie/fengweidie_project
               /04.correct/homolog/Papilio_machaon.protein.tblastn.shell.22556.qsub/
               work.00035.sh.o1386
  Priority = 0
  qtime = Mon Apr 16 23:07:20 2018
  Rerunnable = True
  Resource_List.feature = HPC
  Resource_List.nodename = oldPAR
  session_id = 20021
```

c)

```
[root@mu01 torque6]# qstat -q
```

server: mu01

Queue	Memory	CPU	Time	Walltime	Node	Run	Que	Lm	State
newfat	--	--	--	--	--	6	0	--	E R
gpu	--	--	--	--	--	0	0	--	E R
oldfat	--	--	--	--	--	0	0	--	E R
old	--	--	--	--	--	113	0	--	E R
batch	--	--	--	--	--	0	0	--	E R
fat	--	--	--	--	--	1	0	--	E R
						120	0		

3 qdel —

qdel [-W]

```
qdel -p
# qdel -W 15 211 15 211
```

4 qhold & qrls — &

```
qhold
qrls
```

```
qhold jobid1 jobid2 ...
qrls jobid1 jobid2 ...
jobidX
```

3 PBS

PBS

(1) PBS

```
-C '#PBS'
-a date_time date_time [[[[CC]YY]MM]DD]hhmm[.SS]
date_time
-c interval
-C directive_prefix directive_prefix qsub
'#PBS'
-e path path
-l
-j join join
-k keep
keep o e oe eo
n
-l resource_list
cput=N N CPU hh:mm:ss
mem=N[K|M|G][B|W] N {k|m|g}{bytes|words}
nodes=N:ppn=M N M
-m mail_option mail_option a abort
b
e
```

```

                                a
-M user_list                  mail
-N name                        15
-o path                        path
-p priority                    [-1024 1023]          0
-q destination destination    queue
                                @server
                                queue@server
-r y|n                          y          n
-S shell                       shell
-u user_list
-v variable_list              export
-V                               qsub                export
-W additional_attributes
-z                               qsub

```

(2) Linux

```

[ ]          mpirun_rsh
    $PBS_NODEFILE          PBS

```

```

    mpirun_rsh -np          -hostfile $PBS_NODEFILE

```

4 PBS

1

1 **mpi**

```
#vi aaa.pbs
```

```
#PBS -N myjob
```

```
#PBS -o /home/jz/my.out
```

```
#PBS -e /home/jz/my.err
```

```
#PBS -l nodes=2:ppn=2
```

```
cd
```

```
mpirun -np 4 -hostfile $PBS_NODEFILE /home/jz/helloworld
```

```
mpirun rsh < ..  
PBS  
.pbs  
myjob
```

```
/home/jz/my.out  
.err
```

```
pbs -l nodes=2:ppn=2
```

```
mpirun_rsh -np 4 -hostfile $PBS_NODEFILE /home/jz/helloworld  
-np 4 202 4 cpu -hostfile $PBS_NODEFILE  
/home/jz/helloworld
```

```
mpi .pbs  
mpirun < < 2  
1 PBS xxx.pbs  
2 PBS qsub xxx.pbs
```

```
2 mpi  
mpi PBS
```

```
RunDMol3.sh TiFeCp2-pbe-dspp-m=1-opt
```

```
#vi job.pbs
```

```
#PBS -N physics_job  
#PBS -o /home/physics/physics_job.out  
#PBS -e /home/physics/physics_job.err  
#PBS -q  
#PBS -l nodes=1:ppn=2  
#PBS -r y
```

cd

RunDMol3.sh TiFeCp2-pbe-dspp-m=1-opt

PBS

nodes=1

qstat

qstat -n

a)

#PBS -N D10

#PBS -o log/D10.out

#PBS -e log/D10.err

#PBS -q old

#PBS -l nodes=5:ppn=4

#PBS -r y

cd /newlustre/home/liaolanjie/yc/12_01_ecard

sh gatk.js D10

b)

#PBS -N test_GAPE2

#PBS -o /newlustre/home/zhangmao511/workdir/jar_second/jar/my.out

#PBS -e /newlustre/home/zhangmao511/workdir/jar_second/jar/my.err

#PBS -q fat

#PBS -l nodes=1:ppn=10

#PBS -r y

cd /newlustre/home/zhangmao511/workdir/jar_second/jar

java -jar

/newlustre/home/zhangmao511/workdir/jar_second/jar/GAPE_fat_zebrafish_Liunx_Beta_V2.jar -c

/newlustre/home/zhangmao511/workdir/jar_second/jar/zebrafish_parameters.txt

2

#qsub aaa.pbs

3

qstat

#qstat -a

Job id 211

S

R

Q

E

H

C

#qstat -n

#qstat *jobid1 jobid2 ...*

#qstat -u *user1*

#qstat -f *jobid*

jobid

$\geq$



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1 CPU

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	CPU /CPU	GPU /GPU
	0.2	0.4
	0.4	0.8

300 / 800 /

1∞300 / 5000CPU 8 CPU

2∞800 / 20000CPU 32 CPU

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	/π/
1T-50T	1000
50T-100T	2000
100T-150T	3000
150T	4000

∞

	(%)
--	------

1024CPU(GPU)	0	30	65	100
512- 1023CPU(GPU)	0	40	80	120
256- 511CPU(GPU)	0	50	100	150
128- 255CPU(GPU)	0	60	120	180
64- 127CPU(GPU)	0	70	160	240
64CPU(GPU)	0	100	200	400

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