Job Queues

Not all jobs can be run at once - the cluster is finite! - so when jobs are submitted they are placed into a queue. When a "space" becomes available in the schedule Moab looks down the queue for the first job that will fit into the space.

Jobs are not necessarily placed at the end of the queue - Moab uses the priority (discussed here) to determine where in the queue a job should be placed.

At NYU HPC, part of the cluster is reserved for short (<12 hour) jobs - so short jobs are likely to start sooner

There is more than one queue. Each queue is configured for different types of jobs and has resource limits and priorities set accordingly. If you do not specify a queue to submit to, Torque will use the resources requested to select a queue for you. Frequently this is the best option, however in some circumstances you are better off explicitly specifying a queue.

You can see the list of queues with the command "qstat -q", and you can see more detail about a specific queue with "qstat -Qf queue-name".

The following example shows the queues available on Bowery, with some more detail about each queue in the table below. The output shows:

- The name of each queue
- The maximum memory, CPU time, Wallclock time and number of nodes that a job in each queue can use
- The number of currently queued and currently running jobs in each queue
- The queue job limits and state (these columns are of interest mostly to the system administrators)

```bash
$ qstat -q
server: crunch.local

Queue            Memory CPU Time Wallclock Node Run Que Lm State
---------------- ------ -------- -------- ---- --- --- -- ----
s48                46gb    --    48:00:00    1 606 550 --  E R
bigmem            244gb    --    48:00:00    8   9   0 --  E R
p12                --      --    12:00:00  --   13   7 --  E R
cgsb-s             --      --  1000:00:00  1  17   6 --  E R
route              --      --      --      --    0   0 --  E R
p48                --      --    48:00:00    4   0   0 --  E R
interactive        --      --    04:00:00    2   5   0 --  E R
sysadm             --      --      --      --    0   0 --  E R
cuda               --      --    48:00:00    4   0   0 --  E R
-----  ----- 652   563
```

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