Queue Structure

Category: PBS on Pleiades

Users should be aware of the PBS queue structure. To find the maximum and default NCPUS (number of CPUs), the maximum and default wall time, the priority of the queue, and whether the queue is disabled or stopped, use the command:

`%qstat -Q`

This command also provides statistics of jobs in the states of queued (Q), held (H), running (R), or exiting (E).

Note that the queue structure will change from time to time. Below is a snapshot of the output from this command on June 16, 2011.

```
%qstat -Q
Queue    Ncpus/      Time/         State counts
name       max/def    max/def   jm T/_Q/H/W/__R/E/B pr  Info
======== =====/=== ======/===== == ================ === ========
normal      --/  8  08:00/01:00 -- 0/20/4/0/_60/0/0   0
debug     1025/  8  02:00/00:30 -- 0/_3/0/0/__4/0/0  15
low         --/  8  04:00/00:30 -- 0/_0/0/0/__0/0/0 -10
long      8192/  8 120:00/01:00 -- 0/_8/1/0/206/0/0   0
route       --/  8     --/   -- -- 0/_0/0/0/__0/0/0   0
idle        --/ --     --/   -- -- 0/_0/0/0/__0/0/0   0 disabled
alphatst    --/ -- 120:00/01:00 -- 0/_0/0/0/__0/0/0   0
ded_time    --/ --     --/01:00 -- 0/_0/0/0/__0/0/0   0
devel     4800/  1  02:00/   -- -- 0/_1/0/0/__5/0/0   0
wide        --/ -- 120:00/01:00 -- 0/_1/0/0/__0/0/0  45 disabled
testing     --/ --     --/00:30 -- 0/_0/0/0/__0/0/0   0
somd_spl    --/  8 240:00/01:00 -- 0/_0/0/0/__2/0/0  25
armd_spl  4900/  8 120:00/01:00 10 0/_0/0/0/__0/0/0  15
normal_N    --/  8 120:00/01:00 -- 0/_5/0/0/_10/0/0   0
rtf         --/  8     --/01:00 -- 0/_0/0/0/__0/0/0  65
dpr         --/  8     --/00:10 -- 0/_0/0/0/__0/0/0   0
normal_W    --/  8 120:00/01:00 -- 0/60/5/0/_18/0/0   0
S1848368   744/  1  04:00/   -- -- 0/_0/0/0/__0/0/0   0
kepler      --/  8 120:00/01:00 -- 0/12/0/0/_33/0/0  20
diags       --/ -- 120:00/01:00 -- 0/_0/0/0/__0/0/0   0
```

The *devel* queue on Pleiades is served by pbspl3 (a non-default PBS server). The *devel* queue requires pbspl3 to be included in the syntax for qsub, qstat, and qdel. For more information, read the article Pleiades devel Queue.
To view more information about each queue, use:

`%qstat -fQ` *`queue_name`*

In the output of this command, you will find additional information such as:

acl_groups

Lists all GIDs that are allowed to run in the queue.
For the *normal, debug, long, low* and *wide* queues, all GIDs should be included.
Special queues, such as *esmd_spl, armd_spl, somd_spl, clv_spl*, etc., typically allow a few GIDs only.

default_chunk.model

Specifies the default processor model, if you do not specify the processor model yourself.
All queues, except *normal_N* and *normal_W*, default to using nodes with Harpertown model processors.

resources_min.ncpus

If defined, specifies the minimum NCPUs required for the queue.
The *wide* queue requires using a minimum of 1024 CPUs.

max_user_run

If defined, specifies the maximum number of jobs each user is allowed to run in the queue.
For the *normal* queue, it is set at 10. For the *debug* queue, it is set at 2.

The *normal_N* and *normal_W* queues will be removed in the near future. To request using the Nehalem-EP or Westmere nodes, use "model=neh" or "model=wes" attribute in your *resource_list*. To explicitly request Harpertown nodes, use "model=har". You can apply the model attribute to any queue.

For example:

```
#PBS -q long
#PBS -l select=1:ncpus=12:model=wes
```

Article ID: 187
Last updated: 07 Sep, 2011
Computing at NAS -> Running Jobs with PBS -> PBS on Pleiades -> Queue Structure
http://www.nas.nasa.gov/hecc/support/kb/entry/187/?ajax=1