

# Commonly Used PBS Commands

## Category: Running Jobs with PBS

**man pbs** provides a list of all PBS commands. The four most commonly used PBS commands, **qsub**, **qstat**, **qdel**, and **qhold**, are briefly described below.

### qsub

To submit a batch job to the specified queue using a script:

```
%qsub -q queue_name job_script
```

Common possibilities for *queue\_name* at NAS include *normal*, *debug*, *long*, *devel*, and *low*. When *queue\_name* is omitted, the job is routed to the default queue, which is the *normal* queue.

To submit an interactive PBS job:

```
%qsub -I -q queue_name -lresource_list
```

No *job\_script* should be included when submitting an interactive PBS job.

The *resource\_list* typically specifies the number of nodes, CPUs, amount of memory and walltime needed for this job. The following example shows a request for Pleiades with 2 nodes, 8 CPUs per node, and a walltime limit of 3 hours.

```
%qsub -I -lselect=2:ncpus=8,walltime=3:00:00
```

See **man pbs\_resources** for more information on what resources can be specified. If **-lresource\_list** is omitted, the default resources for the specified queue is used. When *queue\_name* is omitted, the job is routed to the default queue, which is the *normal* queue.

### qstat

To display queue information:

```
%qstat -Q queue_name
```

```
%qstat -q queue_name
```

```
$qstat -fQ queue_name
```

These commands display in different formats all the queue available on the systems, their constraints and status. The *queue\_name* is optional.

To display job status using **qstat -:**

- a Display all jobs in any status (running, queued, held)
- r Display all running or suspended jobs
- n Display the execution hosts of the running jobs
- i Display all queued, held or waiting jobs
- u *user\_name* Display jobs that belong to the specified user
- s Display any comment added by the administrator or scheduler. This option is typically used to find clues of why a job has not started running.
- f *job\_id* Display detailed information about a specific job
- xf *job\_id*, -xu *user\_id* Display status information for finished jobs (within the past 7 days). This option is only available in newer version of PBS, which has been installed on Pleiades, but not on Columbia.

**TIP:** Some of these flags can be combined when checking the job status.

## qdel

To delete a job:

```
%qdel job_id
```

## qhold

To hold a job:

```
%qhold job_id
```

Only the job owner or a system administrator with "su" or "root" privilege can place a hold on a job. The hold can be released using the **qr1s** command.

For more detailed information on each command, see their corresponding **man pages**.

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