

# Resources Request Examples

## Category: PBS on Columbia

### Columbia Phase Out:

As of Feb. 27, 2013, the Columbia21, Columbia23, and Columbia24 nodes have been taken offline as part of the [Columbia phase out process](#). Columbia22 is still available. If your script requires a specific node, please make the appropriate changes in order to ensure the success of your job.

All of the Columbia compute engines, Columbia21-24, are single-system image Altix 4700 systems:

```
Columbia21 (508 CPUs total, 1.8 GB memory/CPU through PBS)
Columbia22 (2044 CPUs total, 1.8 GB memory/CPU through PBS)
Columbia23 (1020 CPUs total, 1.8 GB memory/CPU through PBS)
Columbia23 (1020 CPUs total, 1.8 GB memory/CPU through PBS)
```

Here are a few examples of requesting resources on Columbia:

### Example 1

If your job needs fewer than 508 CPUs and you do not care which Columbia system to run your job on, simply use **ncpus** to specify the number of CPUs that you want for your job. For example:

```
#PBS -l ncpus=256
```

### Example 2

If you specify both the **ncpus** and **mem** for your job, PBS will make sure that your job is allocated enough resources to satisfy both **ncpus** and **mem**. For example, if you request 4 CPUs and 14 GB of memory, your job will be allocated 8 CPUs and 14.4 GB because the amount of memory associated with 4 CPUs is not enough to satisfy your memory request.

```
#PBS -l ncpus=4,mem=14GB
```

### Example 3

If you want your job to run on a specific Columbia machine, for example, Columbia22 with

256 CPUs, use:

```
#PBS -l select=host=columbia22:ncpus=256
```

Note that the **ncpus** request must appear with the **select=host** request and must not be present as a separate request either on the **qsub** command line or in the PBS script.

## Example 4

If you ever need to run a job across two Columbia systems, for example, 508 CPUs on one Columbia and another 508 CPUs on another, use:

```
#PBS -l select=2:ncpus=508,place=scatter
```

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<http://www.nas.nasa.gov/hecc/support/kb/entry/194/?ajax=1>