Tips for requesting resources

Often users will ask about the queue system being slow. The usage volume can be high on either machine, but here are some tips on how to potentially expedite your jobs:

1) Try to estimate the time/resources more accurately - this isn't easy. One strategy is to overestimate the first time you run a job, and then adjust based on what it actually required. The usage information for memory and time are in the job completion email that you get if you specify #PBS -m abe (mail if job (a)borts, (b)egins, (e)nds) in the job script - which I recommend if you aren't doing so already. Then the next time the job runs, you can request more appropriate amounts of resources (always overestimate slightly!).   See KB doc for more information (https://kb.iu.edu/d/avmy).

2) After you submit a job, within a couple minutes, you can use the "showstart" command to see when your job is slotted to start and complete based on its place in the queue.

3) There is also a "showbf" command. This command is a bit trickier but can be very useful in planning your resource requests. You can request information on how long it would take to launch a job with a specific set of resources (-m for memory, -n for nodes, -d for duration). It will also tell you how many task/jobs are in queue for the machine. Here's some examples:

showbf -m <memory needed in mb>
i.e. showbf -m 100000000

output:

Partition	Tasks	Nodes	Duration	StartOffset	StartDate
ALL	207	13	00:00:35	00:00:00	12:10:09_11/10
ALL	191	12	25:18:49:51	00:00:00	12:10:09_11/10
torque	143	9	00:00:35	00:00:00	12:10:09_11/10
torque	127	8	25:18:49:51	00:00:00	12:10:09_11/10
condo	64	4	25:18:49:51	00:00:00	12:10:09_11/10

This output tells you how many nodes are available with the specified memory needed, how long you can run the job on that node number, and for what time amount with what delay. You want to pay attention to the torque nodes, which are what public jobs are run on (condo are owned by specific groups). So, for instance, if you were to request 9 nodes, you could only do that immediately to run a job for 35 seconds. However, if you only request 8 nodes, you can run it for the rest of the month.

i.e. showbf -n <number of nodes>
showbf -n 10

output:

Partition	Tasks	Nodes	Duration	StartOffset	StartDate
ALL	207	13	00:01:00	00:00:00	12:10:25_11/10
ALL	191	12	25:18:49:35	00:00:00	12:10:25_11/10

Similar case here, requesting one less node gives you a lot more time on the machine much faster.

i.e. showbf -t <time needed>
showbf -t 10:00:00

Partition	Tasks	Nodes	Duration	StartOffset	StartDate
ALL	191	12	25:18:44:57	00:00:00	12:15:03_11/10
torque	127	8	25:18:44:57	00:00:00	12:15:03_11/10
condo	64	4	25:18:44:57	00:00:00	12:15:03_11/10

For more information see: http://docs.adaptivecomputing.com/maui/commands/showbf.php

NOTE: This is not 100% accurate. There are limitations on job submission that aren't taken into account (see: https://kb.iu.edu/d/bdkd for details on limits), and this cannot account for jobs finishing faster than expected. But it can give you some help on deciding how much to request (12 versus 13 nodes, etc).