

## How to Check HPC Node Usage (or Availability) ?

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Many tickets ask why jobs are waiting for a long time. When I see tickets like this, I usually check our system and I've found that most of the time this problem occurs because the HPC nodes are very busy. This is not surprising and users can see this information by simply running the `node_status` command on any dev node. `node_status` and is one of the powertools developed by iCER staff. Running this command after loading the powertools module will display all of HPC compute nodes and their most recent status. Here's what you'll see:

```
$ node_status
```

Name	State	Procs	Memory	OS/GPU	Buy-in	
-----	-----	-----	-----	-----	-----	
csm-001	Busy	0:20	82165:271185	rhel63		
csm-002	Busy	0:20	101492:271152	rhel63	albrecht	
csm-003	Busy	0:20	68524:271152	rhel63	colej	
csm-004	Busy	0:20	10065:271185	rhel63	colej	
csm-005	Busy	0:20	111278:271152	rhel63	colej	
...						
...						
csn-001	Busy	0:20	56514:135450	0:2	intel14gpu	
csn-002	Busy	0:20	38928:135450	0:2	intel14gpu	
csn-003	Busy	0:20	62002:135450	0:2	intel14gpu	
csn-004	Busy	0:20	83800:135450	0:2	intel14gpu	
...						
...						
intel14	>>>	223 nds	471:4676	45595965:73645135	2:78	89.93%
...						
...						

The first and second columns show the name and state of the compute node respectively. The third column shows the number of available versus total cores and the fourth shows the available versus total memory (in MegaBytes). The fifth column shows available versus total GPUs (if the node has GPU cards) and the sixth column shows buy-in group if the node is purchased. Node usage statistics are shown on the green-letter line with '>>>'. The last column of this line shows the percentage of cores in use. To see just the core usage, use the command `node_status|grep '>>>'`.

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Since jobs with walltime greater than 4 hours wait longer, it could be useful to know the usage status of non-buyin nodes. To get this information, use the same command with **-b** flag. If no buy-in group is specified along with **-b**, the results show the status of all non-buyin nodes. If a buy-in group is specified, it outputs results of all non-buyin nodes and the nodes with the buy-in group.

If you have questions about using this command, please submit a ticket by visiting <https://contact.icer.msu.edu>.