

# Jobs Alternate Between Running and Queued States

## Category: Resolved

**Problem:** Users experience unexplained job behavior, where a job alternates between Running and Queued states.

## Status: Resolved

If you are still experiencing issues with this problem, contact the NAS Control room: (800) 331-8737, (650) 604-4444, [support@nas.nasa.gov](mailto:support@nas.nasa.gov).

## Actions

**Updated 06.02.11** - NAS systems staff have implemented an automated method to detect processes that are running out of memory. The owner of the job will get an e-mail and the job will be terminated or blocked from rerunning.

## Tips

- If your job is bouncing between Running and Queued states in PBS, then you should assume you have an out-of-memory (OOM) situation and kill your job using the command `qdel`. You can get confirmation of the OOM situation by checking whether a job was killed by the OOM killer; or contact the NAS Control Room staff at (800) 331-8737 or (650) 604-4444.
- If you have processes running out of memory, you can increase the memory available to the processes. For example:
  - ◆ When running on Harpertown nodes, try running on Westmere nodes, which have twice as much memory per core
  - ◆ When running on Westmere nodes, try running on Nehalem nodes, which have 50% more memory per core
  - ◆ Try running with fewer active cores in each node, and running on more nodes
  - ◆ Run the `rank0` process in a node by itself, and add 1 to the number of nodes

## Background

The way in which the system kills processes that are running out of memory has been changed. While the new method leaves the host node in a better state than before, the user no longer gets a message that the out-of-memory condition occurred. Furthermore, the killing is so "efficient" that PBS does not get notified. Consequently, PBS re-queues the job as if it were affected by a system problem.

In addition, SUSE Linux Enterprise 11 (SLES11) has slightly less memory available for processes than was available under SLES10. The combination means that *some* codes that ran fine with SLES10 could fail inexplicably with SLES11.

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<http://www.nas.nasa.gov/hecc/support/kb/entry/275/?ajax=1>