

TORQUE Resource Manager 5.1.1 Release Notes

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New Features

The following is a summary of key new features in TORQUE Resource Manager.

5.1.1

Support for more OSs

These additional OSs are now supported:

- CentOS 7.x
- RHEL 7.x
- Scientific Linux 7.x
- SUSE Linux Enterprise Server 12



Support for Red Hat 7-based and SUSE 12-based systems requires the 5.1.1.2 maintenance release or later.

5.1.0

Ability to Provide Condensed qstat Output

A 'qstat -C' option, which specifies that TORQUE will provide only a condensed output (job name, resources used, queue, state, and job owner) for jobs that have not changed recently (as per the `job_full_report_time` parameter), has been added. Jobs that have recently changed will continue to send a full output.

Performance Enhancements to MOM Clean-up Time

Some minor performance enhancements were made to improve MOM clean-up time.

Differences

This section contains differences in previously existing features that require a change in configuration or routine.

5.1.1

\$prologalarm is Always Honored

\$prologalarm was ignored on the prologue for a job. Also when the epilogue was run the \$prologalarm value was ignored if it was more the 300. Now the \$prologalarm value is always honored regardless of how large it is for both prologue and epilogue scripts. The default timeout is still 300 seconds.

Disable the Automatic Requeuing of Jobs

Added the ability to disable the automatic requeuing of jobs due to transient failures.

pbs_mom now sets environment variable for NVIDIA GPUs

A new mom config parameter, \$cuda_visible_devices, was added to specify whether pbs_mom sets the CUDA_VISIBLE_DEVICES environment variable when it starts a job. The default is TRUE.

Log Milliseconds

Added milliseconds in TORQUE's log files.

pbs_server Enhancement for Very Large Number of Jobs

pbs_server has been enhanced to better handle a very large number of jobs (several hundred thousand or more) by enabling an alternate way for it to store job-related files in the directories \$PBS_HOME/server_priv/jobs and \$PBS_HOME/server_priv/arrays.

A new boolean server attribute, use_jobs_subdirs, lets an administrator direct the way pbs_server will store its job-related files. When use_jobs_subdirs is unset (or set to false), job and job array files will be stored directly under \$PBS_HOME/server_priv/jobs and \$PBS_HOME/server_priv/arrays. This is the default behavior and the way the server has stored these files in the past. When use_job_subdirs is set to true, job and job array files will be distributed over 10 subdirectories under their respective parent directories. This method helps to keep a smaller number of files in a given directory.

If an administrator wishes to change the use_jobs_subdirs attribute from its previous value (or when setting it to true when it has not previously been set), it is highly recommended that TORQUE be drained of all jobs. Failing to take this action may result in the loss of existing jobs.

5.1.0

CLIENTRETRY Configuration Option Support for qdel

The qdel parameter now includes the -b option and CLIENTRETRY configuration option support. This feature functions similar to -b option for qsub. Specifically:

- -b <num> command line argument support
- CLIENTRETRY configuration option support
- PBS_CLIENTRETRY environment variable support

Jobs Deleted When the Dependency Can No Longer Be Satisfied

When a job is deleted because its dependency can no longer be satisfied, that job will follow the keep_completed parameter set (if any) for pbs_server. Previously, jobs were purged immediately.

pbs_server -t No Longer Supports hot|warm|cold Options

The pbs_server -t option no longer supports the hot|warm|cold options. Other options are still supported.

Known Issues

The following are known issues in TORQUE Resource Manager. Following each issue description is an associated issue number in parentheses. Known issues are aggregated and grouped by the release version for which they first occurred or were reported.

5.1.1

- routing queue jobs do not exit the routing queue if the job is submitted with a hold (e.g. `qsub -h`). (TRQ-2788)

5.1.0

- Some limitations exist in the way that `pbsdsh` can be used. Please note the following situations are not currently supported:
 - Running multiple instances of `pbsdsh` concurrently within a single job. (TRQ-2851)
 - Using the `-o` and `-s` options concurrently; although requesting these options together is permitted, only the output from the first node is displayed rather than output from every node in the chain. (TRQ-2690)

Resolved Issues

The following is a list of some key bugs fixed in TORQUE Resource Manager. Following each issue description is an associated issue number in parentheses.

Resolved issues are aggregated and grouped by the release version in which they were resolved.

5.1.1

- **Queue default resources were being modified.** Corrected an issue where the all memory values were converted to bytes after a restart. (TRQ-3139)
- **Some completed jobs were taking quite a while to clear out.** Hardened the removal of completed jobs from pbs_server. (TRQ-3044)
- **Ability to have the procct values displayed on the queues where it was set was lost.** This issue is fixed. (TRQ-3135)
- **max_user_queuable issues.** Fixed some bugs causing incorrect max_user_queuable values. (TRQ-2841)
- **PBS_NUM_NODES on multi-req job wrong when using specific hostnames.** This issue is fixed. (TRQ-1949)
- **Dependency jobs fail to start during HA fail over.** Dependencies now display in the format of depend=type:jobid instead of depend=type:jobid@server. (TRQ-2332)

```
# Was
depend=afterok:12.napali@napali

# Now
depend=afterok:12.napali
```

- **Bug reported that caused jobs to not start when ALPS incorrectly returns a permanent confirmation failure.** This issue is fixed. (TRQ-3023)
- **Problem reported that caused mom restarts to intermittently fail.** This issue is fixed. (TRQ-2307)
- **TORQUE will not compile with --enable-debug on configure.** This issue is fixed. (TRQ-2969)
- **pbs_server would count completed jobs against queue limits when pbs_server was restarted.** This issue is fixed. (TRQ-3087)
- **Compute node offline state doesn't persist across server restarts.** This issue is fixed. (TRQ-2790)

- **With kill_delay and \$exec_with_exec set, a job would be set to a completed state after running qrerun instead of getting set back to queued.** This issue is fixed. (TRQ-2993)
- **qmgr refuses numerical node ids.** This issue is fixed. (TRQ-2946)
- **X11 very slow with qsub -I -X.** The port forwarding buffer size has been increased to improve performance when enabling X11 forwarding from qsub (-X switch). (TRQ-2740)
- **Problem reported with interactive jobs not staying on the node from which they were submitted.** This issue is fixed. (TRQ-3122)
- **Jobs were getting stuck in a running state when an asynchronous run failed.** This issue is fixed. (TRQ-3114)
- **Array slot limits were not getting decremented when a job is preempted or rerun.** This issue is fixed. (TRQ-3110)

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- **HOST_NAME_SUFFIX was no longer adding suffix to job names.** This issue is fixed. (TRQ-2956)
- **pbs_mom filling up the logs in a HA environment.** Reduced verbosity in error logging in HA environments. (TRQ-2863)
- **Delays reported with Preemption.** Speed up process data collection to help diminish time to rerun a job, including correctly sum job memory and cpu time resources for processes created under setsid() calls within a job, and avoid an infinite loop in pbs_mom when running under a Linux Container (lxc). (TRQ-3026)
- **Jobs were getting stuck in a running state when an asynchronous run failed.** This issue is fixed. (TRQ-3114)
- **Array slot limits were not getting decremented when a job is preempted or rerun.** This issue is fixed. (TRQ-3110)