

Workload Management: Why is my workload manager configuration changed by Bright?

Why is my workload manager configuration changed by Bright?

Or perhaps:

How do I make configuration changes to the workload manager (WLM) permanent?

If the configuration changes of a WLM disappear over time (do not stay "frozen"), then you aren't doing configuration the "Bright" way.

If you want to configure a WLM manually outside of Bright Cluster Manager, by directly modifying the configuration files, then you have to explicitly freeze these configuration files in CMDaemon. Otherwise these configuration files will revert to their default values. (These defaults are stored in the CMDaemon database.)

There are two ways to keep the configuration changes of the WLM permanent when CMDaemon is running:

1. by declaring a freeze for the WLM configuration files in CMDaemon and then manually modifying the configuration files directly
2. by having CMDaemon take on the management of the configuration changes. This is done by doing any required changes via the CMDaemon front ends, ie:
 1. with cmgui
 2. with cmsh

These ways are now described:

1 Freezing And Configuring the WLM Manually:

Sometimes it's more convenient to configure the WLM manually by modifying the configuration files directly. This may be done because not all features of a particular WLM can be controlled by the Bright front ends.

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- First freeze the configuration files via CMDaemon, to prevent the changes from being overwritten by CMDaemon:
 - Edit `/cm/local/apps/cmd/etc/cmd.conf`
 - Change

```
FreezeChangesToSGEConfig = false
```

to

```
FreezeChangesToSGEConfig = true
```

- restart cmd with: `service cmd restart`

Note: "SGE" in "FreezeChangesToSGEConfig" can be substituted by "PBSPro", "Torque", "Slurm", "LSF", "OpenLava", or "Condor", depending on the WLM currently installed. This CMDaemon configuration change should be done on both head nodes if there is an HA setup.

- Then modify the configuration file of the WLM. This can then be carried out according to taste. After that, the manual WLM configuration procedure is complete.

2 Configuring the WLM via the CMDaemon Frontends, cmgui and cmsh:

The cmgui/cmsh frontends can be used to configure the more common and generic aspects of the WLM.

2.1 Configuring the WLM via cmgui:

Please refer to the section: *Examples Of Workload Management Assignment* in the *Workload Management* chapter of the Administrator Manual:

<http://support.brightcomputing.com/manuals/6.0/admin-manual.pdf>

2.2 Configuring the WLM via cmsh:

Here are some examples on how to configure SGE via CSMH. SGE should be substituted by the currently installed WLM, for example, Slurm, PBSPro, Torque, LSF or OPENLAVA. Also, sgeclient should be substituted by the appropriate WLM role.

Add a queue:

```
[root@bright60 etc]# cmsh
```

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```
[bright60]% jobqueue; add SGE new.q; commit
```

Add nodes to a queue:

The only way to add a node to a queue is by adding the queue to the list of queues in the WLM role of a category to which this node belongs to.

```
[root@bright60 etc]# csh  
[bright60]% category use default; roles  
[bright60->category[default]->roles]% append sgeclient queues new.q;  
commit
```

Note: If only one queue is required for a particular category, then 'set' is used instead of 'append':

```
set sgeclient queues new.q;
```

Modify number of slots:

The only way to modify number of slots of a queue is by modifying the number of slots of the WLM role of a category to which this queue belongs to.

```
[root@bright60 etc]# csh  
[bright60]% category use default; roles  
[bright60->category[default]->roles]% set sgeclient slots 4; commit;
```

Note: if there is more than one queue assigned to a particular WLM role, then modifying the slots will apply to all the queues.

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