_restrictionsSyntax

Job and Worker Restrictions

Restrictions are used to allow or restrict where jobs run, and are applied to both jobs and Workers. Restrictions are based on cluster names. A job has preferential priority on a Worker whose cluster matches the job's cluster, but the job is free to run on any Worker in any other cluster, subject to the restrictions defined here.

Restrictions defined for jobs

When a job has a restriction defined, it means *only run on hosts that satisfy the restriction expression*. Hosts that don't satisfy the restriction expression won't be considered as dispatch candidates (the job will never be sent to that Worker).

Restrictions defined for Workers

When a Worker has a restriction defined via its worker_restrictions value, it means *only run jobs whose cluster value matches one of the clusters in that worker's restriction expression.* The worker won't accept jobs whose cluster doesn't match one of the clusters in the worker's restriction expression.

Restrictions Syntax

A restriction is really defined as a "filter" for hosts based upon information in the queuing algorithm; the values are one or more cluster names. In the priority/cluster queuing system, a user specifies the restrictions with a directory structure format:

```
/[<segment>/][<segment>/][+|*]
```

- * means *only the first level below*.
- **+** means *all levels below that level, regardless of depth* in the hierarchy.

The restriction value is actually evaluated as an expression, and multiple clusters are specified in a "this cluster **OR** that cluster **OR** the other cluster" type of string, with the " **||** " symbol to mean **OR.**

Examples

Job Restrictions

Syntax	Meaning
`qbsub -cl /private -restr /private <cmd>`	Submit a job that will have highest priority in /private and run *only* in /private
`qbsub -cl /private/very -restr '/private || /private/*' <cmd>`	Submit a job that will have highest priority in /private/very, but could run in *any host* in /private or in the first level below /private
`qbsub -cl /private/very/deep -restr '/private || /private/+' <cmd>`	Submit a job that will have highest priority in /private/very/deep, but could run in *any* host at any level at /private or below

Worker Restrictions

Syntax	Meaning
`worker_cluster = "/private/very/deep"` `worker_restrictions = "/private/very/deep"`	Define a host that will *only* run jobs in /private/very/deep
`worker_cluster = "/private"` `worker_restrictions = "/private || /private/*"`	Define a host that will run jobs in any cluster at */private or 1 level below* - done with the *****
`worker_cluster = "/private/very"` `worker_restrictions = "/private/very || /private/very/+"`	Define a host that will only run jobs in /private/very or any level below - done with the **+**