

Moab

Why does my job run on only 1 node?

Issue: Why does my job run on only 1 node?

Example:

```
Resource_List.nodes = 10:ppn=1
```

The job then runs on only 1 node and not 10 different nodes. Here is an example of echoing out each thread on the host that my mpi job ran under.

```
n8  
n8  
n8  
n8  
n8  
n8  
n8  
n8  
n8  
n8
```

I would have expected 10 different nodes

```
n8  
  
n9  
  
n10  
  
n11  
  
n12  
  
n13  
  
n14  
  
n15  
  
n16  
  
n17  
  
n18
```

Solution:

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By default Moab will stack as many threads on a node as possible. You can change this behavior with:

At submission time:

NMATCHPOLICY

Format

Description

Example

One of the valid settings for the parameter [JOBNODEMATCHPOLICY](#)

Specifies how node resources should be selected and allocated to the job.

```
> qsub -l nodes=2 -W x=nmatchpolicy  
:exactnode bw.cmd
```

Job should use
theEXACTNODEJOBNODEMATCHPOLICY.

Cluster wide policy:

JOBNODEMATCHPOLICY

Format

Default

Description

AUTO, EXACTNODE, or EXACTPROC

AUTO

Specifies additional constraints on how compute nodes are to be selected.

- AUTO overrides the JOBNODEMATCHPOLICY (packs the jobs on any node).
- EXACTNODE indicates that Moab should select as many nodes as requested even if it could pack multiple tasks onto the same node.
- EXACTPROC indicates that Moab should select only nodes with exactly the number of processors configured as are requested per node even if nodes with excess

Moab

JOBNODEMATCHPOLICY

processors are available.

Example

JOBNODEMATCHPOLICY EXACTNODE

In a PBS/Native job with resource specification nodes=<x>:ppn=<y>, Moab will allocate exactly <y> task on each of <x> distinct nodes.

Docs: [NodeMatchPolicy](#)

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