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	One of the valid settings for the parameter JOBNODEMATCHPOLICY
Description	Specifies how node resources should be selected and allocated to the job.
Example	`> qsub -l nodes=2 -W x=nmatchpolicy :exactnode bw.cmd` Job should use theEXACTNODEJOBNODEMATCHPOLICY.

Cluster wide policy:

JOBNODEMATCHPOLICY	
Format	AUTO, EXACTNODE, or EXACTPROC
Default	AUTO
Description	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

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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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