With Intel-MPI

Category: Porting to Pleiades

DRAFT

This article is being reviewed for completeness and technical accuracy.

Intel's MPI library is another alternative for building and running your MPI application. The available Intel MPI modules are:

```
mpi-intel/3.1.038
mpi-intel/3.1b
mpi-intel/3.2.011
```

To use Intel MPI, first create a file $HOME/.mpd.conf that has the single line:

```
MPD_SECRETWORD=sometext
```

('sometext' should be unique for each user)

and change the permission of the file to read/write by you only.

```
%chmod 600 $HOME/.mpd.conf
```

Building Applications

To compile, load an Intel compiler module and an Intel MPI module. Make sure that no other MPI module is loaded (i.e., MPT, MVAPICH or MVAPICH2)

```
%module load mpi-intel/3.1.038
%module load comp-intel/11.1.072
```

Use the **mpiifort**/**mpiicc** scripts which invoke the Intel ifort/icc compilers.

```
%mpiifort -o your_executable program.f
```

Running Applications

To run it, in your PBS script make sure the intel MPI modules are loaded as above, start the MPD daemon, use mpiexec, and terminate the daemon at the end. For example,

```
#PBS ..
..
```

```
module load mpi-intel/3.1.038
module load comp/intel/10.1.021_64

# Note: The following three lines should really be in one line

mpdboot --file=$PBS_NODEFILE --ncpus=1 --totalnum=`cat $PBS_NODEFILE  |
sort -u | wc -l` --ifhn=`head -1 $PBS_NODEFILE`
 --rsh=ssh --mpd=`which mpd` --ordered

# CPUS_PER_NODE and TOTAL_CPUS below represent numerical numbers
# for the job at hand

mpiexec -ppn CPUS_PER_NODE -np TOTAL_CPUS ./your_executable

# terminate the MPD daemon

mpdallexit
```

Article ID: 102
Last updated: 24 May, 2011
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