SGI MPT

SGI's Message Passing Interface (MPI) is a component of the SGI Message Passing Toolkit (MPT), a software package that supports parallel programming across a network of computer systems through a technique known as message passing. MPT requires the presence of an Array Services daemon (arrayd) on each host in order to run MPI processes.

SGI's MPT 1.x versions support the MPI 1.2 standard and certain features of MPI-2. The 2.x versions are fully MPI-2 compliant. Starting with version 2.10, MPT provides complete support for the new MPI 3.0 standard. Recent versions of MPT provide bug fixes and enhancements such as an extension for the packet retry mechanism to cover more message types, and improvements to the congestion detection and control algorithm to address InfiniBand stability and scalability issues.

There may be more than one version of MPT on NAS systems. You can access the recommended version by running:

module load mpi-sgi/mpt

Note that certain environment variables are set or modified when an MPT module is loaded. To see what variables are set when you load mpi-sgi/mpt, complete these steps:

1. Run module show mpi-sgi/mpt to find out which version of MPT the module points to. For example:

   module show mpi-sgi/mpt
   /nasa/modulefiles/sles12/mpi-sgi/mpt:
   system           logger -p local2.info -t envmodule
   module-whatis    Loaded recommended version of MPT.
   module           load mpi-sgi/mpt.2.14r19

2. Run module show file_name to see the environment variables that are set for that version. For example:

   module show mpi-sgi/mpt.2.14r19

You can use the following commands to build an MPI application using SGI MPT:

%ifort -o executable_name prog.f -lmpi
%icc -o executable_name prog.c -lmpi
%icpc -o executable_name prog.cxx -lmpi++ -lmpi
%gfortran -t/nasa/sgi/mpt/2.12r26/include -o executable_name prog.f -lmpi
%gcc -o executable_name prog.c -lmpi
%g++ -o executable_name prog.cxx -lmpi++ -lmpi

TIP: Note that the Fortran 90 USE MPI feature is supported for the ifort command, but not gfortran. Replace USE MPI with include "mpif.h" if you want to use gfortran to compile your Fortran 90 code and link to an SGI MPT library.

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https://www.nas.nasa.gov/hecc/support/kb/entry/89/