Using MPI on Rlogin

gistfile1.md Raw

1. Use your credentials to ssh into rlogin.cs.vt.edu

`ssh user@rlogin.cs.vt.edu`

2. Load openmpi module to get acces to mpi compilers

`module add mpi/openmpi-x86_64`

3. Create/edit your MPI program. You can use `vim` to edit your files in the terminal. Here we will use `vim mpiTest.c` and type in a simple hello world example:

```
/*MPI  Test program*/

#include "mpi.h"
#include  "stdio.h"
int main(argc, argv)
int argc;
char **argv;
{
   int rank, size;
   MPI_Init(&argc,&argv);
   MPI_Comm_rank(MPI_COMM_WORLD, &rank);
   MPI_Comm_size(MPI_COMM_WORLD, &size);
   printf("Hello world! I am %d of %d\n",rank,size);
   MPI_Finalize();
   return 0;
}
```

4. Press `<escape> + :wq` to save your changes and exit `vim`. We are now ready to compile the program.

5. Compile your program. You can add any gcc flags neccessary (examples -O3 -lm)

`mpicc mpiTest.c –o mpiTest.out`

5. Once your program is successfully compiled, run it using `mpiexec` and pass the executable name and the number of MPI processes you need (on most rlogin nodes you can use up to 32 threads)

`mpiexec –np 10 mpiTest.out`

Here is an example of the output

```
Hello world! I am 3 of 10
Hello world! I am 1 of 10
Hello world! I am 9 of 10
Hello world! I am 7 of 10
Hello world! I am 0 of 10
Hello world! I am 6 of 10
Hello world! I am 2 of 10
Hello world! I am 5 of 10
Hello world! I am 4 of 10
Hello world! I am 8 of 10
```