Symmetric Computing Lab

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Exercises

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Exercises

- Login to Stampede

```
ssh <user_id>@stampede.tacc.utexas.edu
```

- Set up lab in your directory

```
tar zxvf ~train00/symmetric_lab.tar.gz
```

- Begin interactive session on one node

```
srun -A 20130425MIC -n 16 -t 1:00:00 \
-p development --pty /bin/bash -l
```

or for tcsh

```
srun -A 20130425MIC -n 16 -t 1:00:00 \
-p development --pty /bin/tcsh -l
```

Exercise 1

Run natively on the MIC using mpiexec.hydra

1. cd into symmetric_lab/symmetric
2. Compile a MIC and host version of pi_hybrid
   (Use either the Fortran or C code – slide #6)
3. Source the MIC environment file:

   csh: `source ./setup_mic.csh`
   bash: `source ./setup_mic.sh`

4. Run on MIC and host using mpiexec.hydra
   (See slide #5)

Exercise 2

Run in a symmetric mode using ibrun.symm

1. Set the MIC_OMP_NUM_THREADS and MIC_PPN environment variables
2. Run on MIC and host using ibrun.symm and the executables from Exercise 1
   (See slide #9)
3. Run using only the MIC
4. Examine config_files created by ibrun.symm
   (Path to config file appears at the beginning of the output)

Exercise 3

Run an MPI code with offload

1. cd into symmetric_lab/offload
2. Compile the offload version of pi_hybrid
   (Use either the Fortran or C code)
3. Set OFFLOAD_REPORT env variable to 2
4. Run using ibrun
5. Compare pi_hybrid source code in offload with pi_hybrid source code in symmetric