

Symmetric Computing Lab

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Exercises

- Exercise 1
 - Run natively on the MIC using `mpiexec.hydra`
- Exercise 2
 - Run in a symmetric mode using `ibrun.symm`
- Exercise 3
 - Run an MPI code with offload

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 20130405MIC -n 16 -t 1:00:00 \  
-p development -pty /bin/bash -l
```

or for tcsh

```
srun -A 20130405MIC -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. 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`

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. Diff pi_hybrid source code in offload with
pi_hybrid source code in symmetric