Instruction:

This document is shared for your convenience in doing PHW4.

This will again be covered in Discussion section on Oct. 2

Run an MPI program on HPCC

- Source the setup file:

  hpc-login3: source /usr/usc/openmpi/default/setup.sh

- Compile the program:

  hpc-login3: mpicc -o mpitest mpitest.c

- Submit the **.pbs** file to the queue. When job submission is successful, the **qsub** command returns the job's process number:

  hpc-login3: qsub mpitest.pbs

  12240.hpc-pbs.usc.edu

https://hpcc-old.usc.edu/resources/documentation/message-passing-interface/
https://hpcc-old.usc.edu/resources/documentation/setting-up-a-mpi-compiler/

http://hpcc.usc.edu/support/documentation/examples-of-mpi-programs/

.pbs example

```
#!/bin/sh
# I am a shell script
# Run on 2 nodes with at least 2 processors each
#PBS -l nodes=2:ppn=2
# Run for 30 minutes
#PBS -l walltime=0:30:00

# Send all output sent to standard out to a file
#PBS -o mpijob.output
# Send all output sent to standard error to a file
#PBS -e mpijob.error
```

.pbs example (cont.)

```
# send my email address an email at the beginning (b) and the
end (e) of the job
#PBS -m be

# My job is called Myjob
#PBS -N Myjob

# my email address
#PBS -M xxx@usc.edu
```

.pbs example (cont.)

```
# Before starting the job. Change into this directory
# this has the executable and output files will be created relative
to this directory
#PBS -d /home/rcf-40/<directory to the excutables>

# Now run the program
mpiexec ./mpitest
```