Welcome to the XSEDE MPI Workshop

John Urbanic
Parallel Computing Scientist
Pittsburgh Supercomputing Center
Who are we?

Your hosts:
Pittsburgh Supercomputing Center

Our satellite sites:
Tufts University
University of Utah
University of Iowa
Howard University
Purdue University
Texas Tech University
University of Delaware
University of Cincinnati
Stony Brook University
Old Dominion University
Georgia State University
Arizona State University
Louisiana Tech University
Ohio Supercomputer Center
University of Texas at El Paso
Pennsylvania State University
West Virginia State University
Georgia Institute of Technology
University of Houston - Clear Lake
University of Puerto Rico at Mayaguez
Lawrence Berkeley National Laboratory
National Center for Supercomputing Applications
University of Tennessee, Knoxville - National Institute for Computational Sciences
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Parallelize codes with

• MPI
• OpenMP
• OpenACC
• Hybrid and Big Data/Machine Learning mixes of these

Mostly for XSEDE platforms. Mostly to extreme scalability.
XSEDE HPC Monthly Workshop Schedule

- June 6-9: Summer Boot Camp
- August 15: HPC Monthly Workshop: OpenMP
- September 12-13: HPC Monthly Workshop: Big Data
- October 3-4: HPC Monthly Workshop: MPI
- November 7: HPC Monthly Workshop: OpenACC
- December 5-6: HPC Monthly Workshop: Big Data
- January 9: HPC Monthly Workshop: OpenMP
- February 7-8: HPC Monthly Workshop: Big Data
- March 6: HPC Monthly Workshop: OpenACC
- April 3-4: HPC Monthly Workshop: MPI
- May 1-2: HPC Monthly Workshop: Big Data
- June 4-7: Summer Boot Camp
- August 7: HPC Monthly Workshop: OpenMP
- September 5-6: HPC Monthly Workshop: Big Data
- October 2-3: HPC Monthly Workshop: MPI
- November 6: HPC Monthly Workshop: OpenACC
- December 4-5: HPC Monthly Workshop: Big Data
Workshops as long as they *should* be.

- You have real lives…
  - in different time zones…
  - that don’t come to a halt.

- General Agenda
  - Lightweight first morning to get all the logistical nonsense out of the way so we can focus on…
  - Intense afternoon
  - Second day is advanced and optional topics (to allow you to continue with exercises at your pace)
  - As much hands on as we can fit…
    - but now 2 weeks of follow on accounts

- Learning is a social process
  - This is not a MOOC
  - This is the Wide Area Classroom
    - so raise your expectations
Tuesday, October 2
11:00 Welcome
11:15 Computing Environment
12:00 Intro To Parallel Computing
1:00 Lunch Break
2:00 Introduction To MPI
3:30 Intro Exercises
4:10 Intro Exercises Review
4:30 Scalable Programming: Laplace Exercise
5:00 Adjourn / Laplace Exercises

Wednesday, October 3
11:00 Advanced MPI
12:30 Lunch break
1:30 Laplace Solution
2:00 Outro To Parallel Computing
2:45 Parallel Debugging and Profiling Tools
3:00 Exercises
4:30 Adjourn
Copying code from PDFs is very error prone. Subtle things like substituting ";" for "," are maddening. I have provided online copies of the codes in a directory that we shall shortly visit. I strongly suggest you copy from there if you are in a cut/paste mood.

The YouTube Channel Has Arrived!

Due to overwhelming demand, and a lot of editing, we have begun to post workshop videos on the XSEDE Monthly Workshop Training Channel:

XSEDETTraining

They will be incrementally appearing in the coming months. Subscribe and give us feedback.
Getting Time on XSEDE

https://portal.xsede.org/web/guest/allocation
Check your email now for the post-event survey.

Surveys are conducted by an external evaluation team. XSEDE staff will not know who said what. If you have questions regarding the evaluation please contact: Lorna Rivera, lirivera@Illinois.edu, or Lizanne DeStefano, ldestefano6@gatech.edu