Message-Passing Programming

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Reusing this material

Contents

- Day 1
  - Message Passing Concepts
  - Basic MPI Programs
  - Point-to-Point Communication
  - Modes, Tags and Communicators

Contents (cont.)

- Day 2
  - Non-blocking Communication
  - Collective Communications
  - Virtual Topologies
  - Derived Datatypes
- Day 3
  - Case Study: Image processing
  - MPI design
  - Case Study (cont.) / Open Surgery

Aims

- A practical course to teach you to
  - understand the message-passing model for parallel programming
  - write parallel programs in C, C++ or Fortran using the MPI library

- You will learn this through
  - lectures
  - notes

- But **MOST IMPORTANTLY** by
  - writing and executing example MPI programs
    - each lecture has an associated practical example

Motivation

- The MPI library is the most important piece of software in parallel programming
- All of the world's largest supercomputers are programmed using MPI
- Writing parallel programs using MPI is fun!