Message-Passing Programming

Neil MacDonald, Elspeth Minty, Joel Malard, Tim Harding, Simon Brown, Mario Antonioletti, David Henty











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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!



