

Lecture 15: MPI

CS178: Programming Parallel and Distributed Systems

March 21, 2001
Steven P. Reiss

I. Overview

- A. Last time we looked at a simple MPI example
- B. This time lets look at a more complex one

II. The problem

- A. Partial differential equations (Poisson process)
 - 1. Using jacobi iterators
- B. Approximate using discrete points
- C. This actually sets up a system of equations

III. Overall solution

- A. Arrays in C/C++, Array class
- B. Linear solver -- approximation process

IV. Splitting the problem up for MPI

- A. Strips first
 - 1. Show overlapping arrays
 - 2. Multiple passes to get data back and forth
- B. Setting up an embedding
- C. The actual implementation