Topics in Parallel Processing

Material To Use

Video Series

Introduction to MPI - SharcNet (Shared Hierarchical

Academic Research Computing Network)

The MPI Parallel Programming Model

- Memory in MPI is assumed to be distributed and not shared.
  - This means you cannot access data in a UE without the UE sending it as a "message" back to you.

- UEs in MPI are processes and should be assumed to be such.
  - MPI v2 has the ability to run each MPI process as a thread —but the MPI software must be configured to run this way by the sysadmin. So you must assume all memory is not shared.

- Sending messages to/from MPI processes is not free.
  - If you need to send 10 MB messages to 10 nodes from one node, the sender will need to transmit 100 MB of data. No matter how fast the interconnects are, it takes time to transmit and receive these messages!

Intro to Hadoop and MapReduce - Udacity