Why Open MPI?

Tim Mattox, Ph.D.
Open Systems Lab
Pervasive Technology Labs
Indiana University

What is Open MPI?

- Open source implementation of MPI-2
- Combined expertise from 4+ previous MPIs
- High performance & robust
- Works with most interconnects
- Modular Component Architecture
  - Combinatorial capabilities
  - Function pointers faster than shared library calls
HPC “Users” of Open MPI

- Researchers
  - Scientists
  - Developers
- Vendors
  - Software
  - Network
  - Cluster/Machine
- Sysadmins

Why Scientists use Open MPI

- High performance implementation
- Common interface on many systems
- Active community support
Why Developers “use” Open MPI

- Open source
- Modular design
  - Treat “uninteresting parts” as black boxes
  - Mix & match components
- The leverage effect
  - Stand on the shoulders of giants
  - Can experiment inside a production quality MPI

Why Software Vendors?

- Portable
- Robust
- High Performance
- Customizable
- Standardized
Why Network Vendors?

- Easy to add support for new hardware
- Benefit from other’s MCA components
- Performance

Why Cluster/Machine Vendors?

- Single solution
- User support community
- Customization/Tuning
Why Sysadmins use Open MPI?

- Single solution
  - Multiple clusters/machines
- Single install for multiple users
  - Runtime selection of features
  - Future support for 32 & 64-bit in one install
- Highly configurable
  - System level
  - User level

Conclusions

- Open MPI membership increasing rapidly
  - Quadrupled in 3 years from 3 initial members
  - Fourteen voting member organizations today
- Major vendor support
- A “Single Solution” has great appeal!

http://www.open-mpi.org/
Open MPI Events @ IU Booth

- Tuesday 1:30 - 2:00pm
  What we’ve done and where we’re going
- Tuesday 2:00pm
  iPod nano giveaway!
- Wednesday 4:00 - 4:50pm
  Open MPI: A research platform
- Thursday 11:00 - 11:50am
  Dealing with disaster: Fault Tolerance in Open MPI

Questions?