Open MPI is Community

- Originally founded by 4 organizations
- Now has 13 members
  - Industry and academic partners
  - More organization in the process of being added
- **Bleeding edge research and industry hardening**
- Collaboration is key
  - The sum is greater than its parts
- **Current status**
  - Version 1.2b1 released at SC'06
Top 500: #6 Sandia Thunderbird cluster

- Linpack result
  - 4347 dual processor nodes
  - 53 teraflops
  - 84.66% network efficiency
- Powered by Open Fabrics / Open MPI
  - Mellanox HCAs
  - Cisco switches

Community Members

<table>
<thead>
<tr>
<th>Academia / Research</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLRS</td>
<td>Cisco</td>
</tr>
<tr>
<td>Indiana University</td>
<td>IBM</td>
</tr>
<tr>
<td>Sandia National Laboratory</td>
<td>Mellanox</td>
</tr>
<tr>
<td>Los Alamos National Laboratory</td>
<td>Myricom</td>
</tr>
<tr>
<td>University of Dresden</td>
<td>QLogic</td>
</tr>
<tr>
<td>University of Houston</td>
<td>Sun</td>
</tr>
<tr>
<td>University of Tennessee</td>
<td>Voltaire</td>
</tr>
</tbody>
</table>
Open MPI works everywhere

- Linux, Solaris, OS X, Windows
- Run-time systems
  - BProc
  - POE / LoadLeveler
  - rsh/ssh
  - SLURM
  - Torque / PBS Pro / OpenPBS
  - XGrid
- InfiniBand (OpenFabrics and VAPI)
- InfiniPath
- Myrinet (MX and GM)
- Portals
- Shared memory
- TCP
- uDAPL
InfiniBand support in Open MPI

- Full support for OpenFabrics
  - Previously known as “OpenIB”
  - Distributed in the OpenFabrics Enterprise Distribution (OFED)
  - Also available from Open MPI web site
- Powered #6 entry in the Top 500 list
  - Sandia thunderbird cluster
- VAPI is also supported, but being phased out
  - No new work except critical bug fixes

OpenFabrics support

- Developed by multiple IB vendors, research organizations, academics
- Repeatable, reliable high performance
  - Low latency
  - High bandwidth (pipelined registration, etc.)
- Native support for multi-port
  - Stripe large messages across available IB ports
- Multi-LID support for congestion avoidance
- Dozens of run-time tunable parameters for power users
Open MPI emerging research / work

- Many forms of fault tolerance
  - Checkpoint / restart
  - Logging, distributed, ...etc.
- Thread safety and asynchronous progress
- Host heterogeneity
- Data reliability, failover
- More networks, schedulers

- ...and more

Don’t see what you want? Come join us!

- Open MPI reflects the union of the priorities of its members
  - Come be part of the process
- Open MPI is a production-quality platform for research

http://www.open-mpi.org/community/contribute
Questions?

Make today an Open MPI day!

http://www.open-mpi.org/