Open MPI
Join the Revolution

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

- Indiana University
- The University of Tennessee
- Los Alamos National Laboratory
- High Performance Computing Center, Stuttgart
- Sandia National Laboratory - Livermore
MPI From Scratch!

- Developers of FT-MPI, LA-MPI, LAM/MPI
  - Kept meeting at conferences in 2003
  - Culminated at SC 2003: Let’s start over
  - Open MPI was born

Jan 2004

SC 2004

Today

Tomorrow

Started work

Demonstrated

Released v1.0

World peace
MPI From Scratch: Why?

• Each prior project had different strong points
  ▪ Could not easily combine into one code base
• New concepts could not easily be accommodated in old code bases
• Easier to start over
  ▪ Start with a blank sheet of paper
  ▪ Decades of combined MPI implementation experience
MPI From Scratch: Why?

- Merger of ideas from
  - FT-MPI (U. of Tennessee)
  - LA-MPI (Los Alamos)
  - LAM/MPI (Indiana U.)
  - PACX-MPI (HLRS, U. Stuttgart)
Layered Software

Operating system

OMPI

ORTE

OPAL
Layered Software

Operating system

OMPI

ORTE

OPAL
Open Run-Time Environment (ORTE)

• Parallel job control
  ▪ Native launching and monitoring parallel jobs
  ▪ rsh/ssh, SLURM, PBS/Torque, BProc, Xgrid
  ▪ *Nothing to do with MPI*

• Rich set of hooks for tools
  ▪ Open MPI’s internal tools (e.g., mpirun)
  ▪ External tools: Greg’s parallel debugger
Current Status

- v1.0 released immanently (see web site)
- Much work still to be done
  - More point-to-point optimizations
  - Data and process fault tolerance
  - Support more run-time environments
  - New Fortran MPI bindings
  - More external tools
  - ...
- Come join the revolution!