The MPI-Forum Organization and Call for Participation

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Chair of the MPI Forum

MPI Forum BOF @ SC14

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

The MPI Forum Drives MPI

- **Standardization body for MPI**
  - Discusses additions and new directions
  - Oversees the correctness and quality of the standard
  - Represents MPI to the community

- **Organization consists of chair, secretary, convener, steering committee, and member organizations**

- **Open membership**
  - Any organization is welcome to participate
  - Consists of working groups and the actual MPI forum
  - Physical meetings 4 times each year (3 in the US, one with EuroMPI/Asia)
    — Working groups meet between forum meetings (via phone)
    — Plenary/full forum work is done mostly at the physical meetings
  - Voting rights depend on attendance
    — An organization has to be present two out of the last three meetings (incl. the current one) to be eligible to vote

Typical Way to Add Items to MPI

1. **New items should be brought to a matching working group for discussion**

   - Creation of preliminary proposal
   - Simple (grammar) changes are handled by chapter committees

Current Working Groups and Topics

- **Collectives & Topologies**
  - Torsten Hoefler, ETH
  - Andrew Lumsdaine, Indiana
- **Fault Tolerance**
  - Wesley Bland, ANL
  - Aurelien Bouteiller, UTK
  - Rich Graham, Mellanox
- **Fortran**
  - Craig Rasmussen, U. of Oregon
- **Generalized Requests**
  - Fab Tillier, Microsoft
- **Hybrid Models**
  - Pavan Balaji, ANL
- **I/O**
  - Quincey Koziol, HDF Group
  - Mohamad Chaarawi, HDF Group

- **Large count**
  - Jeff Hammond, Intel
- **Persistence**
  - Anthony Skjellum, U. of Alabama
- **Point to Point Comm.**
  - Dan Holmes, EPCC
  - Rich Graham, Mellanox
- **Remote Memory Access**
  - Bill Gropp, UIUC
  - Rajeev Thakur, ANL
- **Tools**
  - Kathryn Mohror, LLNL
  - Marc-Andre Hermans, RWTH Aachen
- **New working groups**
  - Added on demand
  - Support of 4 organizations at a physical MPI forum meeting

MPI

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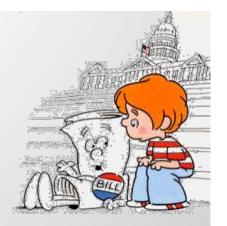   - Simple (grammar) changes are handled by chapter committees

2. **Socializing of idea driven by the WG**
   - Could include plenary presentation to gather feedback
     — Focused on concepts not details like names or formal text
   - Make proposal easily available through WG wiki
   - Important to keep overall standard in mind

3. **Development of full proposal**
   - Latex version that fits into the standard
   - Creation of ticket to track voting

4. **MPI forum reading/voting process**
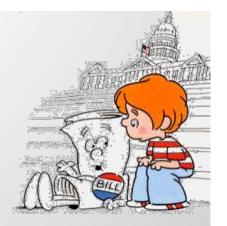
The MPI Voting Process

- **Quorum**
  - 2/3 of eligible organizations have to be present
  - 3/4 of present organization have to vote yes
  - Goal: standardize only if there is consensus

- **Steps**
  1. Reading: "Word by word" presentation to the forum
  2. First vote
  3. Second vote

- **Each step has to be at a separate physical meeting**
  - Ensure people have time to think about additions
  - Avoid hasty mistakes, which are hard to fix
  - Prototypes are encouraged and helpful to convince people

Summary

- **MPI Forum is an open forum**
    - Everyone / every organization can join
    - Want/Need/Encourage community feedback

- **Major work in the next few years on MPI 4**
    - Currently three major initiatives
        — Fault Tolerance
        — Better support for hybrid programming
        — New models for point-to-point communication
    - Many smaller proposals as well

- **Get involved**
    - Let us know what you or your applications need
    - Let us know where MPI is lacking for your needs
    - Help close these gaps!

How To Get Involved

- **Submit comments to the MPI forum**
  - mpi-comments@mpi-forum.org
  - Feedback on prototypes / proposals as well as the existing standard

- **Subscribe to email lists to see what's going on**
  - Each working group has its own mailing list

- **Join a working group**
  - Check out the respective Wiki pages
  - Participate in WG meetings (typically phone conference)
  - Contact the WG chairs to introduce yourself

- **Participate in physical MPI forum meetings**
  - December 2014, San Jose, CA, USA
  - March 2015, Portland, OR, USA
  - Logistics and agendas available through the MPI forum website
  - Drop me an email if you have questions or are interested

- **More information at: http://www.mpi-forum.org/**

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