The Message Passing Interface:
On the Road to MPI 4.0 & Beyond

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Chair of the MPI Forum

MPI Forum BOF @ SC 2018
http://www.mpi-forum.org/
MPI Continuous to Evolve

MPI 3.1 going strong
### Status of MPI-3.1 Implementations

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- NBC: ✔ Open Source but unsupported
- Nbr. Coll.: ✔ Open Source but unsupported
- RMA: ✔ Open Source but unsupported
- Shr. mem: ✔ Open Source but unsupported
- MPI_T: ✔ Open Source but unsupported
- Comm-create group: ✔ Open Source but unsupported
- F08 Bindings: ✔ Open Source but unsupported
- New Dtypes: ✔ Open Source but unsupported
- Large Counts: ✔ Open Source but unsupported
- MPprobe: ✔ Open Source but unsupported
- NBC I/O: ✔ Open Source but unsupported

*Under development (*) Partly done

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Slide Updated 11/6/2018

Release dates are estimated and are subject to change at any time

X indicates no publicly announced plan to implement/support that feature

Thanks to Pavan Balaji
MPI Continuous to Evolve

MPI 3.1 going strong

On track towards MPI 4.0 with major proposed additions

• Better fault management as a first step to fault tolerance
• Persistent collective operations
• New tool interface to capture event traces
• Support for FP16
• Enhancements for one-sided communication
• Detection and optimization of process mappings

Draft standard of currently approved changes

• Preview of parts of MPI 4.0
• Available by tomorrow on MPI Forum website

http://www.mpi-forum.org/
We Want to Grow the MPI Community!
http://www.mpi-forum.org/

MPI Forum is an open forum
• Everyone / every organization can join
• Voting rights depends on attendance of physical meetings

Get involved
• Let us know what you or your applications need
  – mpi-comments@mpi-forum.org
• Participate in WGs
  – Email list and Phone meetings
  – Each WG has its own Wiki
• Join us at a MPI Forum F2F meeting
  – Next meetings: San Jose (Dec), Chattanooga (Mar), Chicago (Jun), Zürich (Sep)
EuroMPI’19
September 11-13 2019
Zurich, Switzerland
https://eurompi19.inf.ethz.ch

Important dates:
Submission server opens: January 14th, 2019
Full paper submission: April 15th, 2019 (AOE)
Notification: July 1st, 2019
Camera-ready: August 5th, 2019
Major Technical Work in the MPI Forum

Wesley Bland, Intel  
Error Management

Kathryn Mohror, LLNL  
MPI_T Events Interface

Pavan Balaji, ANL  
One Sided Communication

Tony Skjellum, UT Chattanooga  
Persistence and Large Count

Dan Holmes, EPCC  
MPI Sessions