

MPI Forum Discussions

MPI 3.1 and MPI 4.0 Strategy & Administrative Issues

March 2014

Agenda

- ▶ **Plans for MPI 3.1**
 - ▶ Status
 - ▶ Cutoff date
 - ▶ Document integration process
 - ▶ **Plans for MPI 4.0**
 - ▶ Gating topics/Timeline
 - ▶ Ticket/Issue process
 - ▶ **Meeting dates for 2015**
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MPI Forum Discussions

MPI 3.1 Strategy

March 2014

Timeline for MPI 3.1

- ▶ Decision last time was to split MPI 3.1 and MPI 4.0 process
 - ▶ Move forward concurrently
 - ▶ Each new ticket will be marked as either one
 - ▶ Shoot for freezing MPI 3.1 functionality during this meeting
 - ▶ We left the final decision for this up to the forum tbd. this time
 - ▶ Timeline if we freeze MPI 3.1 functionality today
 - ▶ Last readings of tickets: March 2014
 - ▶ Errata and ticket 0 are separate issues
 - ▶ First votes: June 2014
 - ▶ Each piece of the document should be votable at this time
 - ▶ Second votes: September 2014 (in Japan)
 - ▶ Start merging immediately (for successful tickets)
 - ▶ Final chapter and document votes: December 2014
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Errata items voted in for MPI 3.0

345	Corrections to the Fortran interface
347	RMA Info appendices
348	RMA Example 11.21
350	RMA origin argument ignored with MPI_NO_OP
354	MPI_T constants erroneously listed for Fortran
355	Get_accumulate Datatype Clarification
359	Update RMA progress rationale
362	MPI 3.0 Errata: RMA same_size info key
367	RMA Typo in function name
385	Tools interface: MPI_T_PVAR_CLASS_SIZE description
386	Tools interface: Clarify error code for perf var routines if bad handle given
387	MPI_T Errata: control -> categories
391	MPI_T: Clarify return code for start/stop/reset of perf vars
388	Solving the FORTRAN LOGICAL and BIND(C) problem
389	MPI_CONVERSION_FN_NULL is missing in annexes A.2, A.3, and A.4
390	Correcting Fortran _CPTR interface descriptions
405	MPI_T: explicitly state the intent of MPI_CHAR in the tools interface
406	MPI_T: remove MPI_T_ERR_INVALID_ITEM

Open Errata items voted in for MPI 3.0

368	MPI_T Minor Errata (ticket 0)
374	Comm_free/Type_free/Vin_free: clarify attribute destructor semantics
392	Tools interface: Need to specify return code for non-started variable (withdrawn)
393	Fortran module CONTAINS - Advice to implementors (???)
403	Error in description of size-specific types (to be reworked by Bill)
413	Add example for use of shared memory (example, ticket 0)

Tickets voted in for MPI 3.1

377	MPI_T get variables and categories by index
378	MPI_T Optional output parameters

- ▶ Please check and clean/up other tickets
 - ▶ Tickets marked for MPI <next>
 - ▶ 36 tickets marked as author rework
 - ▶ 12 tickets marked as feedback requested
 - ▶ 1 ticket marked as waiting for reviews
 - ▶ 1 ticket marked as reviewed
 - ▶ 7 tickets marked as scheduled

Tickets in Voting State for MPI 3.1

► Tickets read this meeting

273	Add Immediate versions of nonblocking collective I/O routines
349	MPI_Aint addressing arithmetic
357	thread-safety of MPI_INITIALIZED, MPI_FINALIZED, MPI_QUERY_THREAD and MPI_IS_THREAD_MAIN in all uses for library correctness
369	Add same_disp_unit info key for RMA window creation
402	Update dynamic window example to use MPI_Aint_add
404	MPI_Aint diff arithmetic

► Tickets that had 1st vote this meeting

400	MPI_T: new return code to catch invalid use of interface
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Open Issues?

- ▶ Are there any issues that would not make it into MPI 3.1 that should if we cut it off today?
 - ▶ Tools WG
 - ▶ Association of variable arrays with enumeration arrays
 - ▶ Clarification on equivalent variables
 - ▶ Deprecation of MPI_T_ERR_INVALID_ITEM
 - ▶ Info Chapter
 - ▶ Ticket 411 / reserving mpi_ info key name space
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Vote

- ▶ Option 1:
 - ▶ Close new topics for MPI 3.1 today
 - ▶ Vote on entire standard at December meeting
 - ▶ Option 2:
 - ▶ Allow last chance for reading in June
 - ▶ Vote on entire standard at March meeting
 - ▶ Option 3:
 - ▶ Don't fix MPI 3.1 time line at all at this point
 - ▶ Option 4:
 - ▶ Stick to schedule with being done in December
 - ▶ Allow one more meeting for readings
 - ▶ Consequence: one email (a) vote OR one extra meeting (b)
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Integration Procedure

- ▶ Chapter committees responsible for integration
 - ▶ Chair or designee has write privileges to SVN MPI 3.1 tree
 - ▶ Must read and follow instruction present in the tree
 - ▶ Coordination with other chairs in case of cross chapter changes
 - ▶ Integration of all tickets (errata and regular tickets)
 - ▶ Update of text
 - ▶ Mark on ticket (incl. comment on the ticket)
 - ▶ Integration of ticket 0 items
 - ▶ Organization of reviews of the text (holistic for the chapter)
 - ▶ Tracking of differences based on SVN diffs
 - ▶ No longer through Latex macros
 - ▶ DON'T REFLOW TEXT
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Expected Documents Before Final Vote

- ▶ PDF version of the chapter
 - ▶ New text without change bars
 - ▶ Diff to previous version
 - ▶ Based on SVN diff
 - ▶ Explanation of changes
 - ▶ Integrated errata items
 - ▶ Integrated tickets
 - ▶ Ticket 0 changes beyond grammar changes
 - ▶ Example: examples
 - ▶ Target: provide these documents 2 weeks before final vote
 - ▶ Enable others outside the chapter committee to review
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Chapter Committees

- ▶ Front Matter: tdb.
- ▶ (1) Introduction: tdb.
- ▶ (2) MPI Terms and Conventions: tdb.
- ▶ (3) Point to Point Communication: Torsten Hoefer, Martin Schulz, Bill Gropp, Sayantan Sur, Rich Graham, **Dan Holmes**
- ▶ (4) Datatypes: George Bosilca, Jeff Hammond
- ▶ (5) Collective Communication: Torsten Hoefer, George Bosilca
- ▶ (6) Groups, Contexts, Communicators, Caching: **Pavan Balaji**, Bill Gropp, Sayantan Sur
- ▶ (7) Process Topologies:
- ▶ (8) MPI Environmental Management: George Bosilca
- ▶ (9) The Info Object: Torsten Hoefer, Jeff Hammond, Pavan Balaji
- ▶ (10) Process Creation and Management: David Solt
- ▶ (11) One-Sided Communication: Pavan Balaji, Torsten Hoefer, Rajeev Thakur, **Bill Gropp**, Sayantan Sur, Joshua Ladd
- ▶ (12) External Interfaces: **Pavan Balaji**, Dries Kimpe, Jeff Hammond, Jim Dinan, Aurélien Bouteiller
- ▶ (13) I/O: Mohamad Chaarawi, Rajeev Thakur, Dries Kimpe, Quincey Koziol
- ▶ (14) Tool Support: **Kathryn Mohror**, Martin Schulz
- ▶ (15) Deprecated Functions: Rolf Rabenseifner
- ▶ (16) Removed Interfaces:
- ▶ (17) Language Bindings: Jeff Hammond, Rolf Rabenseifner, **Jeffrey M. Squyres**
- ▶ (A) Language Bindings Summary: Jeff Hammond, Rolf Rabenseifner
- ▶ (B) Change-Log: Rolf Rabenseifner
- ▶ Bibliography: tdb.

MPI Forum Discussions

MPI 4.0 Strategy

March 2014

Major Items

- ▶ **Actively worked on**
 - ▶ Hybrid WG: Endpoints
 - ▶ FT WG: FT proposal
 - ▶ For Pavan: MPI_Info keys
 - ▶ **Concepts being considered**
 - ▶ Active messages
 - ▶ Streams
 - ▶ Reworked PMPI interface
 - ▶ **Language bindings (in particular Fortran)**
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MPI 4.0 Process

- ▶ New items should be brought to a matching working group for discussion
 - ▶ Creation of preliminary proposal
 - ▶ Ticket 0 changes are handled by chapter committees
 - ▶ 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
 - ▶ Development of full proposal
 - ▶ Latex version that fits into the standard
 - ▶ Creation of ticket to track voting
 - ▶ MPI forum reading/voting process
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Best Practices for Writing Tickets

- ▶ Each ticket ideally should have the following sections (modeled after the MPI 2.2 process)
 - ▶ Description of the problem
 - ▶ If applicable: history
 - ▶ Proposed Solution
 - ▶ Impact on Implementations
 - ▶ Impact on Applications/Users
 - ▶ Alternative solutions
 - ▶ Entry for the change log (if required)
 - ▶ Reminder to ticket authors to update ticket metadata
 - ▶ In particular voting/reading status and meeting location
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MPI Forum Discussions



Administrative Issues



March 2014

Meeting Calendar

- ▶ **Next meetings (fixed)**
 - ▶ June 2-5 2014, Chicago
 - ▶ September 15-17 2014, Kobe
 - ▶ December 8-11 2014, San Jose
 - ▶ **Future meetings (open / to be decided)**
 - ▶ March 2-5 2015, Portland
 - ▶ June 1-4 2015 Chicago
 - ▶ September ??? 2015, with EuroMPI
 - ▶ December 7-10 2015, San Jose
 - ▶ **Action items**
 - ▶ Please check on possible conflicts
 - ▶ Check for rooms & locations
 - ▶ Do we want to change the frequency based on needs?
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