



MPI 2.1 at MPI Forum Chicago, June 30 – July 2, 2008

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MPI 2.1
Slide 1

Höchstleistungsrechenzentrum Stuttgart

H L R I S 

MPI-2.1 – Current Status

- All ballot and review discussions are done (except 2nd vote of Ballot 4)
- MPI-1.3 (May 30, 2008) and
- MPI-2.1 (June 23, 2008)
 - Finished
 - Official reading was April 28-30, 2008
 - Printed books are available at this meeting
 - 2 x MPI-1.3 (dark yellow / gold)
 - 2 x MPI-2.1 (draft June 13, 2008) – Part I (light yellow) + Part II (orange)
 - 2 x MPI-2.1 (June 23, 2008) – Part I (light yellow) + Part II (orange)
 - One pair **black/white** version,
 - the other pair **colored** version (marking the merging and review process)
 - 1st official vote at this meeting, 2nd vote in Dublin, Sep. 3-5, 2008
- Problems
 - A few additional minor bugs detected and fixed in MPI-2.1 (draft June 13, 2008) and MPI-2.1 (June 23, 2008), i.e., they were missing in the official reading
 - Will be discussed in 5pm-slot today

MPI-2.1 – Working Plan

- Finishing the official reading
- Voting
 - By institution
 - Each institution has 3 votes:
 - Ballot 4 (2nd vote) // MPI-1.3 (1st vote) // MPI-2.1 (1st vote)
 - **You can vote 3 times the same, or making 3 individual decisions**
- Open issues → MPI-2.2
 - File http://www.hlrs.de/mpi/mpi21/doc/MPI-2.1-reviews_open-issues.txt / .pdf / .ps
 - Categories
 - **A: Significant enhancement or modification that should be discussed in the MPI-2.2 process**
 - **B: Maybe nice to have or maybe already solved. Handed over to the originators of the items.**
 - Each reviewer gets his own list of items
 - Electronically back to Bill Gropp & Rajeev Thakur
- Offline discussions
 - How to handle MPI-2.2 and MPI-3.0 documents
 - Impression from MPI-2.1: Only Forum members should be authors of Latex text

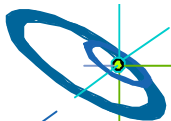
Finishing the MPI-2.1 Official Reading

- 3 Typo corrections
- In the tables in Annex A.1.1, the C++ type declarations of the constants was removed during the merging process.
 - My apologies for not detecting this bug earlier.
 - I recovered these declarations according to
 - **MPI-2.0, Annex B, MPI-1 C++ Language Binding**
 - **Ballot 2, Item 15-17:**
`const MPI::Datatype` → `MPI::Datatype`
 - **Ballot 3, Item 12:**
`const void * MPI::BOTTOM` → `void * const MPI::BOTTOM`



Finishing the MPI-2.1 Official Reading - continued

- I removed the predefined “null”-callbacks
MPI_{COMM | TYPE | WIN}_{NULL_COPY | DUP | NULL_DELETE}_FN
from Appendix A.4.4 (C++ binding for Chap. ...Caching),
because:
 - Sect. 6.7.3, 6.7.4, and 6.7.5 tell “same name in C, Fortran, and C++”.
 - In Annex A.1.1:
 - **MPI-2.1 (Draft June 13, 2008) page 499
and MPI-2.1 (June 23, 2008) page 497, lines 15-17**
 - **MPI::{NULL_COPY | DUP | NULL_DELETE}_FN are defined for
deprecated functions**
 - **Senseless routines, because the C++ routines, where they can be
used as IN function-argument, do not exist,**
 - **C++ naming as usual with MPI::**
 - **I moved this problem to MPI-2.2**



Tuesday 9:00 am

Ballot 4

1. Incorrect use of MPI_IN_PLACE in description of MPI_ALLGATHER and MPI_ALLGATHERV
- 2.a-g Edits to MPI-2 Chapter 4, Miscellany
3. Interlanguage use of Attributes **and** Error in Example 4.13 in MPI-2 (Use of Attributes in C and Fortran)
4. What info keys can be set?
5. Datatypes and MPI_PROBE
6. MPI_PROCNUL and RMA Part 2
- (7.+9. → **MPI 2.2**)
8. Thread safety and collective communication
- 10.a-d Questions about Cart_create & Cart_coords
- 10.e Questions a. Cart_create & Cart_coords (Typo)
- 11.a-c Questions about Graph_create
12. Why no MPI_INPLACE for MPI_EXSCAN?
13. MPI_GET_PROCESSOR_NAME, MPI_COMM_GET_NAME and Fortran/C
14. Interpretation of user defined datarep
- 15.a-b MPI_Abort
16. MPI_Type_create_f90_real etc.
17. MPI_File_get_info
18. MPI_File_set_view
19. MPI_IN_PLACE for MPI_Reduce_scatter
20. Blocklengths of zero in MPI_TYPE_STRUCT and in MPI Datatypes
21. Which thread is the funneled thread?
- 22.A Change "INOUT" to "IN" for MPI Handle Parameters in several routines, Proposal A

Official vote:

Do you accept

- the listed MPI-2.1 Ballot 4 items,
- MPI-1.3 (May 30, 2008), and
- MPI-2.1 (June 23, 2008) ?

All official votes together

Each institution is asked for three votes:

- Ballot 4: 2nd vote
- MPI-1.3 (May 30, 2008): 1st vote
- MPI-2.1 (June 23, 2008): 1st vote

You can vote

- 3 times the same,
- or making 3 individual decisions.

Ballot 4: Yes: 22; No: 0; Abstain: 0

MPI-1.3: Yes: 22; No: 0; Abstain: 0

MPI-2.1: Yes: 22; No: 0; Abstain: 0

Number of institutions: 22

(at this meeting)

Not in the room: 0

(while voting)

Implementation of MPI-2.1

- Do you **expect** that your company/organization is able to implement the 33 issues of MPI-2.1 (see Annex B, Change-Log) until EuroPVM/MPI 2008 (Sep. 7-10, 2008)?
- If no, please can you give an **estimate**.

Library	Yes mm/yy	asked
MPICH2	YES	Rajeev Thakur
Open MPI	YES	Jeff Squyres
IBM	12/2008	Dick Treumann
Sun Microsystems	YES	Rolf Vandevaart
Microsoft	12/2008	Erez Haba
Fujitsu	end 2009	Sueyasu, Naoki

Library	Yes mm/yy	asked
Bull		Yann Kalemkarian
HP		Kannan Kaushik
Cray	Q1 2009	Mark Pagel
NEC	YES	Hubert Ritzdorf, Jesper Traeff
Intel		Alexander Suplaov, Keith Underwood
SiCortex	YES	David Gingold



MPI-2.1 – ½-Year Project – a Statistical Summary

1st telephone conference, December 21, 2007 – Final MPI-2.1, June 23, 2008

Work
months

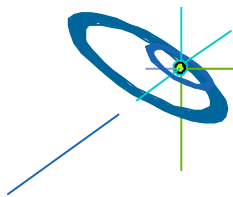
- MPI 1.3 + 2.0, merging 335 distinguished parts 1
- Ballot 1+2 40 items implemented
- Ballot 3 14 items / 12 accepted + implemented
- Ballot 4 22 items / 20 accepted + implemented 1
+ a lot of e-mails by MPI Forum members 1
- Review items 24 also implemented in MPI-1.3
analyzed and ... 26 still open questions → MPI-2.2
(814 items) 19 handed over to chapter authors
77 done by MPI-2.1 chapter authors
101 deferred to MPI-2.2
14 question & answer only
68 rejected (reasons communicated to the authors)
485 items implemented by myself (253 since last meeting) 1

- Total summary 1225 items
- 14 chapter authors 21 chapters / annexes / frontm. / bibl. / index 7
(x 2 weeks/author) read and corrected
- 20 meeting hours Dec.07 telco: **0.5h** + Jan.08: 5 h +
(x 40 members) Mar.08: **7 h** + Apr.08: **6.5 h** + June 08: **1 h** 5

16

months

H L R I S



Published Files

Discussion:

Do we need more / other ?

All okay as it is?

Yes:
24

No:
1

Abstain:
0

- Normal Version with colored links (for online usage or colored printing):
[mpi-report-2.1-2008-06-23.pdf](#) *)
- Normal Version with colored links (for colored printing only):
[mpi-report-2.1-2008-06-23.ps](#)
[mpi-report-2.1-2008-06-23-small.pdf](#)
[mpi-report-2.1-2008-06-23-twice.pdf](#)
[mpi-report-2.1-2008-06-23-split-book-A5.pdf](#)
- Normal Version with black links (for black/white printing only):
[mpi-report-2.1-2008-06-23-black.pdf](#) *)
[mpi-report-2.1-2008-06-23-black.ps](#)
[mpi-report-2.1-2008-06-23-black-split-book-A5.pdf](#)
[mpi-report-2.1-2008-06-23-black-twice-part1.pdf](#) **)
[mpi-report-2.1-2008-06-23-black-twice-part2.pdf](#) **)
- Version with colors showing the development of MPI-2.1 (only for reviewing/history purpose):
[mpi-report-2.1-2008-06-23-reviewcolors.pdf](#) *)
[mpi-report-2.1-2008-06-23-reviewcolors.ps](#)
[mpi-report-2.1-2008-06-23-reviewcolors-split-book-A5.pdf](#) **)
- **BLUE:** Separately compiled (i.e., six files = six independent Latex runs)
- **ORANGE:** Additional files for convenient printing (based on .ps → published shell script)
- *) with **correct cross references** for Acrobat reader (table of content, citations, index)
- **) used for printed books at the Forum meeting



Follow-Up: Next Steps

- Ballot 3 → was done at last meeting
- Ballot 4 → is done at this meeting
- MPI-1.3 → Sep'08 2nd vote = done
- MPI-2.1 → Sep'08 2nd vote = done
- Libraries:
First Implementations until EuroPVM/MPI 2008 is feasible

