

MPI 4.1 Planning

MPI 4.1

Originally planned for 1.5 - 2 years after MPI 4.0

MPI 4.0 was published in June 2021

Current (most optimistic, not realistic) schedule for fastest publish:

- December 2022 - Last call for readings
- February/March 2023 - Last call for 1st votes
- May/June 2023 - Last call for 2nd votes
- September 2023 - RCM
- December 2023 - FRM

Probably not going to happen 😊

Things to be Discussed

Left over Items (and some smaller new tickets)

- Project Boards on GitHub
- Many individual items / many owners
- Need to verify what is still valid for MPI 4.1

Complete Clean-Up passes over all chapters

- Items like “MPI process”, ranks without communicators, terms
- Responsible: chapter committees / chairs

Items from the working groups

- Keep in mind, only small additions
- What is ready and what should be ready for MPI 4.1
- Any hard gating issues?

Currently Approved Issues

Editor changes

Erratas integrated

Currently added (merged since MPI 4.0)

- Add error class `MPI_ERR_ERRHANDLER`
- v4.x: remove dead code and comments
- address example formatting issue 442
- Added `MPI_Status_set_elements_c` through a `POLYKIND`

Working Group Status? (Part 1)

Collectives / Partitioned

Pbuf-prepare (re-read soon), device request (goes along with accelerator bindings)

Nice to have: Issue [83](#), Issue [537](#)

Collectives probably too far

Fault Tolerance

Removal of error classes (needs minor changes still),

major proposals (ULFM2, Reinit -> 5.0)

Hardware Topologies

Query to retrieve HW names (was postponed from 4.0)

stretch goal: split on pset names (may be too far, let's see)

Hybrid and Accelerators

Info keys to support accelerator interactions (may be reading in September, still needs work)

Accelerator bindings for some MPI procedures (urgently need discussions in September, perhaps side document)

Resolve thread concurrency issue (need decision in Sep/Dec on whether it is worth pushing it along further for MPI 4.1)

Connection to stream work (does this push us in one direction?) - or should this be decided alone?

Working Group Status? (Part 2)

Languages

- Likely all targeted towards 5.0

- May need a conversation about stating the role for side documents

- General discussion on how to add things like language bindings

Remote Memory Access

- Catch up with the new semantic terms, Operator vs. Operation clean up ticket

- MPI_Win_shared_query proposal (reading soon)

Semantic Terms

- General progress section, would need to be discussed (soon) - may be time will run out for this (Issue [493](#))

- Include table from side document, integrate back into standard (with RMA terms and progress issue resolved)

- Needs two issues (RMA into table and table into standard) -> Puri

- Claudia has a list of open crosscutting issues / issue on replacing “tasks” term (reverted in PR 258)

Working Group Status? (Part 3)

Sessions

Errorhandling corrections (after FT change first, PR [644](#)) - PR [617](#) / Issue [511](#)

Majority of work intended for MPI 5.0

Tools

No real gating issues, but some could make it (Issue [519](#))

Generalization of creation paired datatypes for reduction (Issue [520](#))

Majority of work intended for MPI 5.0

General / Crosscutting issues

Progress on different tests (Get_request_status, test in RMA)
across the standard (like Issue [468](#), [499](#))

Front-Matter for collectives (is already on the board, Issue 90)

Current Status of Other Issues

MPI 4.1 Project Board (as of July 14th):

- 134 open issues (2 unassigned)
- 48 in progress
- 3 had reading

Need to triage these to decide whether to kick them out of MPI 4.1

- Knocked down to 120 open issues after a quick triage
 - 113 if you exclude editor changes

Most of these issues are very small and can be done quickly.

What do I do?

If you are a member of a chapter committee, you probably already have some issues assigned to you:

- <https://bit.ly/my-mpi-41> (<https://github.com/orgs/mpi-forum/projects/1/views/3>)

If something is assigned to you, decide:

1. Should this thing be done?
2. Should it be done for MPI 4.1 (in the next 3 ~ 6 months)?
3. Will *I* do it for MPI 4.1?
4. Who *will* do it for MPI 4.1?

If you don't have anything assigned to you, look for a chapter committee that interests you.

- There's a ton of issues that are relatively easy for someone to pitch in.

What is the timeline?

Need at least two or three more meetings before we start the countdown

- Takes 4 meetings (about 1 year) to go from last readings to final document

If we started now, we would finish in December 2023

- Realistically, if we give three more meetings (after September) for readings to finish, MPI 4.1 would be at least Spring 2024.
- Remember that it's rare for most readings to “pass” on the first try.

Can potentially add more meetings if needed/desired to give us more opportunity to complete