



Tool Chapter Changes in MPI 4.1

Chapter Committee Members

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Excluding editorial changes

- #161 Clarify behavior for invalid MPI_T binding arguments
- #795 Fixes to distinguish MPI error codes and MPI_T return codes
- #723 Clarify returned value in case of overflow in counts
- #734 Fixing examples in tools chapters
- #735 Fix use of operation in tools chapter
- #754 Extend LIS to inout for handle arguments in MPI_T functions
- #796 Fix notation of function name wildcards
- #851 Removing unnecessary sentence about unpleasant requirements
- #853 Fix language (high/low watermark)
- #854 Remove Solaris/SysV parenthetical

Overview of (smaller) changes

- Fixes to typesetting (`\const` vs. `\error`, `\const` vs. `\mpiconst`) (as editorial changes)
- Moving `\caption` statements to beginning of figures and tables
- Using `lstlisting` **over** `verbatim`
- Using `nonnegative` **over** `non-negative` (as editorial changes)
 - LIS is still inconsistent (also in other chapters)
 - Needs fix in binding-tool config
- Using `procedure` **over** `function`

Improving the index hierarchy

~~verbosity levels!tools~~ → verbosity level!tool information interface & tool information interface!verbosity level

~~control variables!tools~~ → variable!tool information interface & tool information interface!control variable

~~performance variables!tools~~ → variable!tool information interface & tool information interface!performance variable

~~performance variables!tools~~ → variable!tool information interface & tool information interface!performance variable

```
return code!tool information interface & tool information interface!return code
```

- missed single “event types” in index — should be fixed

Handling the use of “operation”

“variables to control their ~~operation~~ behavior and performance”

“writing ~~is a local operation~~ only affects the local MPI process

“the query ~~operation~~ procedure”

~~“if atomic operations on this variable~~ *this variable cannot be read or written atomically*”

“information about the ~~operation~~behavior of MPI processes.”

~~“query operation are continuously operating~~ query procedure are continuously updated

error code vs. return code

routine up to the current point of execution. Calling it more times returns a corresponding ~~error~~return code. As long as the number of calls to `MPI_T_FINALIZE` is smaller than the number of calls to

variable once it has been added to the set. When a variable becomes inactive, e.g., through dynamic unloading, accessing its value should return a corresponding ~~error~~return code.

a variable once it has been added to the set. When a variable becomes inactive, e.g., through dynamic unloading, accessing its value should return a corresponding ~~error~~return code.

All functions with the prefix `MPI_T`, except those listed in Table [...], may return the ~~error~~return code ...

MPI_T entity binding

“interface routines return to identify the object type. It is erroneous to bind a control variable, performance variable, or event to a handle that would not be valid to use as an input argument to another MPI call (excluding calls to the MPI Tool Information Interface) at the same point of execution.”

Chapter Committee level wording

variable in this class represents a value that describes the ~~high-watermark~~maximum utilization of a resource.

variable in this class represents a value that describes the ~~low watermark~~ **minimum** utilization of a resource.

If the compiler and linker support weak external symbols (e.g., Solaris 2.x, other System V.4 machines), symbols, then only

*It is required that the standard MPI library be built in such a way that the inclusion of MPI functions can be achieved one at a time. This ~~is a somewhat unpleasant requirement, since it~~ may mean that each external function ~~has to be compiled from a separate file. However this~~ **must reside in its own compilation unit.** ...*

- **Draftable:** <https://draftable.com/compare/WbVczdHqPSME>
- **Github:**
 - **Introduction:** <https://github.com/mpi-forum/mpi-standard/compare/mpi-4.0...mpi-41-rc1#diff-9838849b2fad0a60e3e74f3dcb3e8b8be17b4792204bbde91a32a63d58cb0400>
 - **MPI_T:** <https://github.com/mpi-forum/mpi-standard/compare/mpi-4.0...mpi-41-rc1#diff-cdef3eadd2844ab4778ede0409ca4abaf3a09d1684e215bbd9db1c559bc47e5e>
 - **PMPI:** <https://github.com/mpi-forum/mpi-standard/compare/mpi-4.0...mpi-41-rc1#diff-936b27f802671b3a1da5eef2bd0a9a6d6a07a9fb8fd0498f45c57361ba7f7036>

Chapter Reviews

- First review: not in yet
- Second review: <https://github.com/mpi-forum/mpi-standard/pull/873/files>

Thank you.