Document for a Standard Message-Passing Interface

Message Passing Interface Forum

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Chapter 15

Deprecated Functions

15.1 Deprecated since MPI-2.0

The following function is deprecated and is superseded by MPI_COMM_CREATE_KEYVAL in MPI-2.0. The language independent definition of the deprecated function is the same as that of the new function, except for the function name and a different behavior in the C/Fortran language interoperability, see Section 17.2.7. The language bindings are modified.

\[
\text{MPI_KEYVAL_CREATE}(\text{copy\_fn, delete\_fn, keyval, extra\_state})
\]

| IN | copy\_fn | Copy callback function for keyval |
| IN | delete\_fn | Delete callback function for keyval |
| OUT | keyval | key value for future access (integer) |
| IN | extra\_state | Extra state for callback functions |

\[
\text{int MPI\_Keyval\_create(MPI\_Copy\_function *copy\_fn, MPI\_Delete\_function *delete\_fn, int *keyval, void* extra\_state)}
\]

For this routine, an interface within the mpi_f08 module was never defined.

\[
\text{MPI\_KEYVAL\_CREATE(COPY\_FN, DELETE\_FN, KEYVAL, EXTRA\_STATE, IERROR)}
\]

\[
\text{EXTERNAL COPY\_FN, DELETE\_FN}
\]

\[
\text{INTEGER KEYVAL, EXTRA\_STATE, IERROR}
\]

The copy\_fn function is invoked when a communicator is duplicated by MPI_COMM_DUP. copy\_fn should be of type MPI\_Copy\_function, which is defined as follows:

\[
\text{typedef int MPI\_Copy\_function(MPI\_Comm oldcomm, int keyval,}
\]

\[
\text{void *extra\_state, void *attribute\_val\_in,}
\]

\[
\text{void *attribute\_val\_out, int *flag)}
\]

A Fortran declaration for such a function is as follows:

For this routine, an interface within the mpi_f08 module was never defined.

\[
\text{SUBROUTINE COPY\_FUNCTION(OLDCOMM, KEYVAL, EXTRA\_STATE, ATTRIBUTE\_VAL\_IN,}
\]

\[
\text{ATTRIBUTE\_VAL\_OUT, FLAG, IERR)}
\]
INTEGER OLDCOMM, KEYVAL, EXTRA_STATE, ATTRIBUTE_VAL_IN,
ATTRIBUTE_VAL_OUT, IERR
LOGICAL FLAG

copy_fn may be specified as MPI_NULL_COPY_FN or MPI_DUP_FN from either C or FORTRAN; MPI_NULL_COPY_FN is a function that does nothing other than returning flag = 0 and MPI_SUCCESS. MPI_DUP_FN is a simple-minded copy function that sets flag = 1, returns the value of attribute_val_in in attribute_val_out, and returns MPI_SUCCESS. Note that MPI_NULL_COPY_FN and MPI_DUP_FN are also deprecated.

Analogous to copy_fn is a callback deletion function, defined as follows. The delete_fn function is invoked when a communicator is deleted by MPI_COMM_FREE or when a call is made explicitly to MPI_ATTR_DELETE. delete_fn should be of type MPI_Delete_function, which is defined as follows:

typedef int MPI_Delete_function(MPI_Comm comm, int keyval,
void *attribute_val, void *extra_state);

A Fortran declaration for such a function is as follows:

For this routine, an interface within the mpi_f08 module was never defined.

SUBROUTINE DELETE_FUNCTION(COMM, KEYVAL, ATTRIBUTE_VAL, EXTRA_STATE, IERR)
INTEGER COMM, KEYVAL, ATTRIBUTE_VAL, EXTRA_STATE, IERR

delete_fn may be specified as MPI_NULL_DELETE_FN from either C or FORTRAN; MPI_NULL_DELETE_FN is a function that does nothing, other than returning MPI_SUCCESS. Note that MPI_NULL_DELETE_FN is also deprecated.

The following function is deprecated and is superseded by MPI_COMM_FREE_KEYVAL in MPI-2.0. The language independent definition of the deprecated function is the same as of the new function, except of the function name. The language bindings are modified.

MPI_KEYVAL_FREE(keyval)
INOUT keyval Frees the integer key value (integer)

int MPI_Keyval_free(int *keyval)

For this routine, an interface within the mpi_f08 module was never defined.

MPI_KEYVAL_FREE(KEYVAL, IERROR)
INTEGER KEYVAL, IERROR

The following function is deprecated and is superseded by MPI_COMM_SET_ATTR in MPI-2.0. The language independent definition of the deprecated function is the same as of the new function, except of the function name. The language bindings are modified.
15.1. **Deprecated Since MPI-2.0**

```c
MPI_ATTR_PUT(comm, keyval, attribute_val)
```

- **INOUT** `comm` communicator to which attribute will be attached (handle)
- **IN** `keyval` key value, as returned by `MPI_KEYVAL_CREATE` (integer)
- **IN** `attribute_val` attribute value

```c
int MPI_Attr_put(MPI_Comm comm, int keyval, void* attribute_val)
```

For this routine, an interface within the `mpi_f08` module was never defined.

```c
MPI_ATTR_PUT(COMM, KEYVAL, ATTRIBUTE_VAL, IERROR)
```

```c
INTEGER COMM, KEYVAL, ATTRIBUTE_VAL, IERROR
```

The following function is deprecated and is superseded by `MPI_COMM_GET_ATTR` in MPI-2.0. The language independent definition of the deprecated function is the same as of the new function, except of the function name. The language bindings are modified.

```c
MPI_ATTR_GET(comm, keyval, attribute_val, flag)
```

- **IN** `comm` communicator to which attribute is attached (handle)
- **IN** `keyval` key value (integer)
- **OUT** `attribute_val` attribute value, unless `flag = false`
- **OUT** `flag` true if an attribute value was extracted; false if no attribute is associated with the key

```c
int MPI_Attr_get(MPI_Comm comm, int keyval, void *attribute_val, int *flag)
```

For this routine, an interface within the `mpi_f08` module was never defined.

```c
MPI_ATTR_GET(COMM, KEYVAL, ATTRIBUTE_VAL, FLAG, IERROR)
```

```c
INTEGER COMM, KEYVAL, ATTRIBUTE_VAL, IERROR
```

```c
LOGICAL FLAG
```

The following function is deprecated and is superseded by `MPI_COMM_DELETE_ATTR` in MPI-2.0. The language independent definition of the deprecated function is the same as of the new function, except of the function name. The language bindings are modified.

```c
MPI_ATTR_DELETE(comm, keyval)
```

- **INOUT** `comm` communicator to which attribute is attached (handle)
- **IN** `keyval` The key value of the deleted attribute (integer)

```c
int MPI_Attr_delete(MPI_Comm comm, int keyval)
```

For this routine, an interface within the `mpi_f08` module was never defined.

```c
MPI_ATTR_DELETE(COMM, KEYVAL, IERROR)
```

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CHAPTER 15. DEPRECATED FUNCTIONS

INTEGER COMM, KEYVAL, IERROR

15.2 Deprecated since MPI-2.2

The entire set of C++ language bindings have been removed. See Chapter 16, Removed Interfaces for more information.

The following function typedefs have been deprecated and are superseded by new names. Other than the typedef names, the function signatures are exactly the same; the names were updated to match conventions of other function typedef names.

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