

MPI_Comm_f2c(3)

Open MPI

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NAME

MPI_Comm_f2c, MPI_Comm_c2f, MPI_File_f2c, MPI_File_c2f, MPI_Info_f2c, MPI_Info_c2f, MPI_Op_f2c, MPI_Op_c2f, MPI_Request_f2c, MPI_Request_c2f, MPI_Type_f2c, MPI_Type_c2f, MPI_Win_f2c, MPI_Win_c2f – Translates a C handle into a Fortran handle, or vice versa.

SYNTAX**C Syntax**

```
#include <mpi.h>
MPI_Comm MPI_Comm_f2c(MPI_Fint comm)
MPI_Fint MPI_Comm_c2f(MPI_Comm comm)

MPI_File MPI_File_f2c(MPI_Fint file)
MPI_Fint MPI_File_c2f(MPI_File file)

MPI_Group MPI_Group_f2c(MPI_Fint group)
MPI_Fint MPI_Group_c2f(MPI_Group group)

MPI_Info MPI_Info_f2c(MPI_Fint info)
MPI_Fint MPI_Info_c2f(MPI_Info info)

MPI_Op MPI_Op_f2c(MPI_Fint op)
MPI_Fint MPI_Op_c2f(MPI_Op op)

MPI_Request MPI_Request_f2c(MPI_Fint request)
MPI_Fint MPI_Request_c2f(MPI_Request request)

MPI_Datatype MPI_Type_f2c(MPI_Fint datatype)
MPI_Fint MPI_Type_c2f(MPI_Datatype datatype)

MPI_Win MPI_Win_f2c(MPI_Fint win)
MPI_Fint MPI_Win_c2f(MPI_Win win)
```

DESCRIPTION

Handles are passed between Fortran and C or C++ by using an explicit C wrapper to convert Fortran handles to C handles. There is no direct access to C or C++ handles in Fortran. Handles are passed between C and C++ using overloaded C++ operators called from C++ code. There is no direct access to C++ objects from C. The type definition *MPI_Fint* is provided in C/C++ for an integer of the size that matches a Fortran *INTEGER*; usually, *MPI_Fint* will be equivalent to *int*. The handle translation functions are provided in C to convert from a Fortran handle (which is an integer) to a C handle, and vice versa.

For example, if *comm* is a valid Fortran handle to a communicator, then *MPI_Comm_f2c* returns a valid C handle to that same communicator; if *comm* = *MPI_COMM_NULL* (Fortran value), then *MPI_Comm_f2c* returns a null C handle; if *comm* is an invalid Fortran handle, then *MPI_Comm_f2c* returns an invalid C handle.

NOTE

This function does not return an error value. Consequently, the result of calling it before *MPI_Init* or after *MPI_Finalize* is undefined.

