

Message Objects

Introduction

The **Message** module manages text strings associated with the error/warning code return values that can be returned from MPI methods. Each method return value has a unique value which can be decoded using the Message methods and macros.

For example, a return value of MEISynqNetMessagePLL_ERROR has a defined value of 0x192E. Passing this value to the `mpiMessage(...)` function returns the following text string:

"SynqNet: node PLL unable to lock with drive"

If MEISynqNetMessagePLL_ERROR was the last return value received from an MPI method, the string returned from `mpiMessage(...)` would also contain extended message information. The extended message information provides greater insight into the problem that has just occurred. In this case, the extended message information would indicate which node had the PLL locking problem:

"SynqNet: node PLL unable to lock with drive : Node 3"

Notice that the extended message information is delimited from the more generic message by a colon surrounded by spaces " : "

Extended message information may not always be returned. Extended information is only available for the very last return value from the MPI -- if a second (non-zero) return value has been returned between the time when the first return value was returned and the call to `mpiMessage(...)`, then no extended information would be returned. In addition, not all messages return extended error information.

Methods

Configuration and Information Methods

[mpiMessage](#)

[mpiMessageFunction](#)

Associate message text with a function

Data Types

[MPIMessageFunction](#)

Macros

[mpiMessageID](#)

[mpiMessageMODULE](#)

[mpiMessageNUMBER](#)

mpiMessage

Declaration

```
const char *mpiMessage(long messageId,
                      char *messageText)
```

Required Header

stdmpi.h

Description

mpiMessage returns the text message associated with *messageId* and copies the text to *messageText* if *messageText* is not NULL.

If "messageText" is	Then
NULL	<i>Message</i> returns a pointer to message text resident in the library
not NULL	<i>Message</i> returns the pointer <i>messageText</i> , which must point to a buffer large enough to hold the message text (that will be copied into it)

Return Values

NULL	if messageId is invalid
Pointer to an empty string (" ")	if the messge utility is not enabled or the message function pointer associated with <i>messageId</i> is NULL.
Pointer to a non-zero-length string	if the mpiMessage successsfully retrieves the message associated with <i>messageId</i> .

See Also

[mpiMessageFunction](#)

mpiMessageFunction

Declaration

```
long mpiMessageFunction(MPIModuleId moduleId,  
MPIMessageFunction function)
```

Required Header

stdmpi.h

Description

MessageFunction registers *function* as the function to be called by **mpiMessage(...)** (in order to obtain the text for a message associated with module *moduleId*).

MessageFunction is typically called internally by object create methods. Applications generally do not need to call *MessageFunction* directly.

Return Values

MPIMessageOK	if <i>MessageFunction</i> successfully registers <i>function</i> as the function to be called by mpiMessage(...)
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See Also

[mpiMessage](#)

MPIMessageFunction

MPIMessageFunction

```
typedef const char * (*MPIMessageFunction)(long);
```

Description

MessageFunction is the type definition for the callback function used by `mpiMessage(...)`. A default callback function is provided internally to all MPI/MEI modules, but an application can also be written to override it and provide a custom message function instead.

See Also

[mpiMessage](#) | [mpiMessageFunction](#)

mpiMessageID

Declaration

```
#define mpiMessageID(module number) \
((long)((((module) & MPIModuleIdMAX) << 8) | \
((number) & 0xFF)))
```

Required Header stdmpi.h

Description **MessageID** converts the message module value and number to a unique message identification value.

See Also [mpiMessage](#)

mpiMessageMODULE

Declaration

```
#define mpiMessageMODULE(messageId) \  
((messageId) & (MPIModuleIdMAX << 16)) >> 16)
```

Required Header stdmpi.h

Description **MessageMODULE** converts the message identification value to the message module value.

See Also [mpiMessage](#)

mpiMessageNUMBER

Declaration

```
#define mpiMessageNUMBER(messageId) ((messageId) & 0xFF)
```

Required Header stdmpi.h

Description **MessageNUMBER** converts the message identification value to the message number.

See Also [mpiMessage](#)