

DECI2 Library Overview

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About This Manual

This manual is the Runtime Library Release 2.4 version of the *DECI2 Library Overview*.

It describes the set of functions that control the DECI2 Manager and perform communication between the host and the target. The library is provided to assist in the creation of protocol drivers that run on the target.

Changes Since Last Release

None

Related Documentation

Note: the Developer Support Web site posts current developments regarding the Libraries and also provides notice of future documentation releases and upgrades.

Typographic Conventions

Certain Typographic Conventions are used throughout this manual to clarify the meaning of the text:

Convention	Meaning
<code>courier</code>	Indicates literal program code.
<i>italic</i>	Indicates names of arguments and structure members (in structure/function definitions only).
medium bold	Indicates data types and structure/function names (in structure/function definitions only).
blue	Indicates a hyperlink.

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Overview

The DECI2 library is a set of functions that control the DECI2 Manager and perform communication between the host and the target. The library is provided to assist in the creation of protocol drivers that run on the target.

A protocol driver consists of two parts. One of these is an event handler which processes events posted from the DECI2 Manager. Since the event handler is called during a state different from that of normal system state, there are several restrictions concerning its programming. Among the functions provided to the DECI2 Manager, Ex is added to the names of the functions to be called from the event handler to explicitly distinguish them from functions to be called from locations other than the event handler. DCMF packets are posted as events.

For the EE

The event handler is called using the same method as the interrupt handler. However, functions provided by the EE Kernel cannot be used while the event handler is executing.

For the IOP

The event handler is called during a special state that is not subject to management by the IOP system software. Therefore, from the protocol driver's viewpoint, the system has the following three states.

1. Thread part executing
State in which normal system services can be used
2. Thread-independent part executing (such as an interrupt handler)
State in which limited system services that are specific to thread-independent parts can be used
3. DECI2 event handler executing

System service functions cannot be used while the DECI2 event handler is executing. (library functions that are declared by ctype.h, memory.h, or string.h are exceptions and can be used.)

Also, while the DECI2 event handler is executing, the CPU is in an interrupt-disabled state in kernel mode. The stack used within the event handler should be made as small as possible.

Related files

The following files are required for the DECI2 library.

Table 1

Category	Filename
library file	libkernl.a (EE only)
header file	deci2.h

List of Functions

The following functions are included in the DECI2 library.

Registration and control of protocols

Table 2

Function name	Description
sceDeci2Open	Register protocol driver
sceDeci2Close	Close protocol driver
sceDeci2ExLock	Lock other protocols
sceDeci2ExUnLock	Unlock

Sending and receiving DECI2 packets

Table 3

Function name	Description
sceDeci2ExRecv	Receive DECI2 packet
sceDeci2ExSend	Send DECI2 packet
sceDeci2ReqSend	Request DECI2_WRITE event
sceDeci2ExReqSend	Request DECI2_WRITE event

Thread Synchronization From the Event Handler (IOP Only)

Table 4

Function name	Description
sceDeci2ExWakeupThread	Wake up sleeping thread
sceDeci2ExSignalSema	Issue signal to semaphore
sceDeci2ExSetEventFlag	Set event flag

Printing for Debugging Within the Event Handler (IOP Only)

Table 5

Function name	Description
sceDeci2ExPanic	printf from within the event handler

Error Codes

Table 6

Error code		
DECI2_ERR_INVALID	-1	// invalid argument
DECI2_ERR_INVALSOCK	-2	// invalid socket descriptor
DECI2_ERR_ALREADYUSE	-3	// protocol number already used
DECI2_ERR_MFILE	-4	// too many open protocols
DECI2_ERR_INVALIDADDR	-5	// invalid address for buffer
DECI2_ERR_PKTSIZE	-6	// buffer is too small
DECI2_ERR_WOULDBLOCK	-7	// blocks inspite of asynchronous
DECI2_ERR_ALREADYLOCK	-8	// already locked
DECI2_ERR_NOTLOCKED	-9	// not locked
DECI2_ERR_NOROUTE	-10	// no route to host
DECI2_ERR_NOSPACE	-11	// no room left on manager
DECI2_ERR_INVALIDHEAD	-12	// invalid deci2 header
DECI2_ERR_NOHOSTIF	-13	// no interface to Host

