

Release Notes – CLIB V2.70

The tickets are grouped by component and then sorted by type and ticket number.

CLIB

Ticket: #2345

Component: CLIB

Type: defect

Summary: Compilation error in heap.c reentrant heap

Description: The optional heap.c source file will not compile due to a incorrect function name for RTL `_clib_farcoreleft()`.

Also the `_coreleft()` alias conflicts with the compiler's current RTL.

Solution: Correct typo and eliminate `_coreleft` alias.

Ticket: #2356

Component: CLIB

Type: enhancement

Summary: Add RSA API functions

Description: The CLIB should provide API functions for RSA signature and verification.

Solution: Added API.

Release Notes – CLIB V2.60

The tickets are grouped by component and then sorted by type and ticket number.

CLIB

Ticket: #2332

Component: CLIB

Type: defect

Summary: Problems in BeckHeap library when compiled for debug

Description: Some compilation problems occur when the BeckHeap library is recompiled with the BECK_HEAP_DEBUG switch defined.

Solution: Added INSIDE_BECKHEAP_SOURCE compilation switch. Also added _damagedHeapFooter to debug version for additional trace information.

Ticket: #2342

Component: CLIB

Type: defect

Summary: fossil_register_external_port_ext() generates a linker error

Description: The function fossil_register_external_port_ext() cannot be used and generates a linker error.

Solution: Fixed.

Release Notes – CLIB V2.50

The tickets are grouped by component and then sorted by type and ticket number.

CLIB

Ticket: #2314

Component: CLIB

Type: defect

Summary: Alternative heap is missing reentrant farcoreleft() function

Description: The heap.c source file should also have a thread safe implementation for the farcoreleft() function.

Solution: Added farcoreleft() function to heap.c source file.

Ticket: #2315

Component: CLIB

Type: defect

Summary: CGI_GetCookie() writes to address zero

Description: The documentation states that NULL pointers can be passed if the user is not interested in a parameter. This does not work. The CGI_GetCookie() function writes to memory address zero in this case.

Solution: Fixed.

Ticket: #2320

Component: CLIB

Type: enhancement

Summary: Add SHA-256 hash method API functions

Description: Add connections to the SHA-256 calculator now inside the @Chip-RTOS-x86.

Solution: SHA-256 hash API added to C-library

[Main page](#)

Release Notes – CLIB V2.40

The tickets are grouped by component and then sorted by type and ticket number.

CLIB

Ticket: #2302

Component: CLIB

Type: defect

Summary: Get_Driver_Info() corrupts SI register

Description: The packet driver API function Get_Driver_Info() must preserve the SI register.

Solution: Fixed.

[Top of page](#) | [Main page](#)

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Release Notes – CLIB V2.30

The tickets are grouped by component and then sorted by type and ticket number.

CLIB

Ticket: #2293

Component: CLIB

Type: defect

Summary: CGI_GetArgument() parsing problem

Description: If the name/value pair string given to the CGI function contains a name, but no value and looks e.g. like this, cgi?name1&name2, then the CGI_GetArgument() function delivers only one argument (name1 and empty value), instead of two arguments (name1 and name2 with empty values).

If the argument string looks like this, cgi?name1=&name2=, then two arguments with an empty value are correctly returned by the CGI_GetArgument() function.

Solution: Fixed.

Ticket: #2300

Component: CLIB

Type: enhancement

Summary: New functions

Description: Support the new API functions of SC1x3/SC2x RTOS V1.60 Release.

Solution: Implemented.

[Main page](#)

Release Notes – CLIB V2.24

The tickets are grouped by component and then sorted by type and ticket number.

CLIB

Ticket: #2292

Component: CLIB

Type: enhancement

Summary: New functions

Description: Support the new API functions of SC1x3/SC2x RTOS V1.54 Release.

Solution: Implemented.

[Top of page](#) | [Main page](#)

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Release Notes – CLIB V2.23

The tickets are grouped by component and then sorted by type and ticket number.

CLIB

Ticket: #2233

Component: CLIB

Type: defect

Summary: Missing PPP Client error constant

Description: Some PPP client error constants appear in the CLIB documentation, but are missing in the header file.

Solution: Add missing constants.

Ticket: #2257

Component: CLIB

Type: defect

Summary: Re-entrant heap.c not ok for MEDIUM or SMALL memory models

Description: The near heap implementation in the RTL does not work properly when called from tasks.

Solution: Re-implement near heap functions `_clib_malloc()`, `_clib_free()` and `_clib_realloc()` in Paradigm-Beck RTL. Call new `_initNearHeap()` procedure at startup.

Ticket: #2252

Component: CLIB

Type: enhancement

Summary: Alternative program heap library

Description: An alternative program heap implementation which does not round off allocations to nearest paragraph boundary (256 bytes) would be helpful to reduce the total memory requirements in applications with a high number of dynamically allocated objects.

Users could then optionally plug this new heap library into their programs to replace the standard C-library's `malloc()` and `free()` implementation.

Solution: Add optional Beck Heap to C-Library

Ticket: #2256

Component: CLIB

Type: enhancement

Summary: Faster huge pointer arithmetic for 24 bit extended mode targets

Description: An optional library with faster huge pointer arithmetic can be provided for SC1x3/SC2x programs.

Solution: Added optional HugePtr library to the Beck C-Library set.

Ticket: #2273

Component: CLIB

Type: enhancement

Summary: "Peek" feature at TCPIP socket recv(from) API functions

Description: The socket API functions recv() and recvfrom shall support the MSG_PEEK flag: "Peek" at the data present on the socket; the data is returned, but not consumed, so that a subsequent receive operation will see the same data.

Solution: Implemented.

Ticket: #2274

Component: CLIB

Type: enhancement

Summary: Set various general TCPIP options

Description: The CLIB shall support a functions, which allows to set various general options e.g. for ARP and IP protocols.

Solution: Implemented API TCPIP_SetOption(), see CLIB documentation.

Ticket: #2286

Component: CLIB

Type: enhancement

Summary: New functions

Description: Support the new API functions of SC1x3/SC2x RTOS V1.53 Release.

Solution: Implemented.

Release Notes – CLIB V2.22

The tickets are grouped by component and then sorted by type and ticket number.

CLIB

Ticket: #2186

Component: CLIB

Type: defect

Summary: Declaration of DevIoctlSubOption

Description: The pointers at struct DevIoctlSubOption should be declared as far.

Solution: Fixed.

Ticket: #2199

Component: CLIB

Type: enhancement

Summary: I2C Bus Reset function

Description: At I2C bus systems the situation could occur (in rare cases), that an I2C slave hangs. This situation is a general problem and not a specific problem of the IPC@CHIP I2C bus. An application note from "Analog Devices" (AN-686) describes this problem in detail. One solution to get a slave out of the hang-up situation is to reset the slave by switching his VCC with a separate PIO. Another possibility is the execution of a "clock sequence" by the I2C-Bus master, also described at this application note. The RTOS CLIB should provide such a functionality.

Solution: Implemented.

Ticket: #2229

Component: CLIB

Type: enhancement

Summary: New functions

Description: Support the new API functions of SC1x3/SC2x RTOS V1.50 Release.

Solution: Implemented.

Release Notes – CLIB V2.20

The tickets are grouped by component and then sorted by type and ticket number.

CLIB

Ticket: #2142

Component: CLIB

Type: defect

Summary: DeleteStaticRoute() does not use its first parameter

Description: DeleteStaticRoute() is not correctly documented. The first parameter is not used.

Solution: Remove BX register setting from code. Change API's documentation.

Ticket: #2143

Component: CLIB

Type: defect

Summary: AddStaticRouteEx() API does not work for II_USER_DEVICE

Description: The DevHandlePtr to AddStaticRouteEx() is not properly placed in the DX:SI register pair.

Solution: Set SI register correctly.

Ticket: #2136

Component: CLIB

Type: enhancement

Summary: helper_load_library() and helper_unload_library() const argument

Description: The libName argument to the helper_load_library() and helper_unload_library() library functions should be declared "const" type since these functions treat this string as read-only.

Solution: Added "const" to these function's libName arguments' declarations.

Ticket: #2145

Component: CLIB

Type: enhancement

Summary: Missing socket option constants

Description: Should provide several missing socket option constants.

Solution: Added constants.

Ticket: #2163

Component: CLIB

Type: enhancement

Summary: New functions

Description: Support the new API functions of SC1x3/SC2x RTOS V1.40 Release, e.g. the BSD compatible socket interface functions, Dev_Set_IfaceMTU(), BIOS_Disk_Close() etc.

Solution: Implemented.

Ticket: #2166
Component: CLIB
Type: enhancement
Summary: Add helper_clibVersion() function.
Description: Provide a library function which reports the version of the Beck C-Library that a program is being linked with.
Solution: helper_clibVersion() added to C-library.

Release Notes – CLIB V2.19

The tickets are grouped by component and then sorted by type and ticket number.

CLIB

Ticket: #2109
Component: CLIB
Type: defect
Summary: Incompatible constant INADDR_LOOPBACK
Description: The TCPIP IPv4 socket constant INADDR_LOOPBACK must be defined in host byte order as 0x7F000001.
Solution: Fixed

Ticket: #2119
Component: CLIB
Type: defect
Summary: C-Library header files should use bracket notation instead of quotes
Description: #include <file>
should be used instead of
#include "file"
notation to assure that header file from C-library is included and not one of same name from within a particular project.
Solution: Edit the set of C-Lib header files to use the <> brace notation.

Ticket: #2110
Component: CLIB
Type: enhancement
Summary: Missing BSD socket constants
Description: Should add several BSD socket constants: SOL_SOCKET, IP_PROTOIP and IP_PROTOTCP
Solution: Implemented: Added SOL_SOCKET, IP_PROTOIP and IP_PROTOTCP

Ticket: #2117
Component: CLIB
Type: enhancement
Summary: RTX error code documentation needs improvement
Description: 1) Error codes which can never occur are documented.
2) The defines provided in <RTXERR.H> include file are not stated in the documentation.
Solution: Clean up the RTX error code documentation page.

Ticket: #2120
Component: CLIB
Type: enhancement

Summary: Add htonl() function and ntohs and ntohl macros to C-Lib

Description: These functions complete the normal set of operators which are expected for TCP/IP stack operation.

Solution: Added htonl() function and the ntohs() and ntohl() macros.

Ticket: #2122

Component: CLIB

Type: enhancement

Summary: New functions

Description: Support the new API functions of SC1x3/SC2x RTOS V1.35 Release.

Solution: Implemented.

[Top of page](#) | [Main page](#)

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Release Notes – CLIB V2.18

The tickets are grouped by component and then sorted by type and ticket number.

CLIB

Ticket: #2107

Component: CLIB

Type: defect

Summary: RTX_GetFineTick() does not adapt to power mode change.

Description: Following a power mode adjustment made with the BIOS_Power_SaveEx() API, the RTX_GetFineTick() must respond to the reprogramming of the system's RTI timer.

Solution: Run RTX_FineTickInit() again when ever the TIMER2 limit count has changed.

Ticket: #2081

Component: CLIB

Type: enhancement

Summary: Cryptographic functions' input data should be declared "const"

Description: The C-Lib prototypes for Crypt_MD5_Update(), Crypt_SHA1_Update() and Crypt_AES_Encrypt/Decrypt() should have a const type for the input streams.

The C-Lib Crypt_AES_MakeEncryptKey() and Crypt:_AES_MakeDecryptKey() API key parameter should be made a const pointer type.

Also make the data pointer types for the various cryptographic functions void type, so that any form object can be referenced without requiring casting in the application program source code.

Solution: Adjust the C-Lib prototypes on these API.

Ticket: #2103

Component: CLIB

Type: enhancement

Summary: New functions

Description: Support the new API functions of SC1x3/SC2x RTOS V1.35 Beta.

Solution: Implemented.

Ticket: #2105

Component: CLIB

Type: enhancement

Summary: Add function Dev_Get_DHCP_Data()

Description: CLIB shall support TCP/IP API function 0xB2: Dev_Get_DHCP_Data(), which was introduced with RTOS V1.23.

Solution: Implemented.

Release Notes – CLIB V2.17

The tickets are grouped by component and then sorted by type and ticket number.

CLIB

Ticket: #2042

Component: CLIB

Type: defect

Summary: pszLong_Name member of LRN_FILE_FIND declaration error

Description: pszLong_Name member of LRN_FILE_FIND must be declared as far pointer.

Solution: Add "far" to pointer declaration

Ticket: #2043

Component: CLIB

Type: defect

Summary: Pointer variables at data structures

Description: Some pointer variables at data structures are not explicitly declared as far. This leads to malfunction of some API functions, when applications are compiled in memory model medium or small. There is no failure, if the application is compiled in memory model large or huge.

Solution: Fixed LFN_FILE_FIND, IPCallbackUserInfo, ARPCallbackUserInfo_t, PPPClie_ModemCmd, PPPClient_Init_IPv6, DevIpv6IfaceCfg.

Ticket: #2044

Component: CLIB

Type: defect

Summary: 0x20 error flag not documented for PKI_CertificateAdd() API

Description: The meaning of the 0x20 is not documented. Also the various defines stated in the documentation do not exist in the C-library header files.

Solution: Document 0x20 flag and add the suggested #define constants to the TCIPAPI.H header file.

Ticket: #2065

Component: CLIB

Type: defect

Summary: Software interrupt for function fossil_setbaud()

Description: The function fossil_setbaud() is implemented in the CLIB and either calls the software interrupt for fossil_setbaud_std() or fossil_set_extctrl() depending on the desired baud rate. When implementing an external serial port driver, the function fossil_set_extctrl() might be useless if the device uses a separate clock. The divider will be wrong. There's no solution if the application program calls the deprecated function fossil_set_extctrl(). But for fossil_setbaud() there should be a real software interrupt.

Solution: Implemented

Note that fossil_setbaud() now calls a software interrupt which is not available on old RTOS versions. To force fossil_setbaud() to behave like before set the define 'FOSSIL_SETBAUD_LEGACY' before including the CLIB.

Ticket: #2067
Component: CLIB
Type: enhancement
Summary: New functions
Description: Added new API functions:
 BIOS_Server_State(), BIOS_Set_Error(), CGI_Install_Func_OnUpload(),
 CGI_Enable_Upload(), SSI_Get_Connection_Params(), PPP_Client_Pause(),
 PPP_Server_Pause()
Solution: Implemented



Release Notes CLIB V2.16

This document lists all modifications, additional features and bugfixes of the Beck CLIB versions since version V2.08. The release note lists are sorted by our internal change request numbers "CR Number" and by the "Type" of the change request. We defined three different types of change request: "Defect", "Suggestion" and "New". The report fields "Component" and "Category" are describing the affected parts of the CLIB. "Synopsis" and "Description" are used for description of the change request.

- [CLIB V2.16](#)
- [CLIB V2.15](#)
- [CLIB V2.14](#)
- [CLIB V2.13](#)
- [CLIB V2.12](#)
- [CLIB V2.11](#)
- [CLIB V2.10](#)
- [CLIB V2.09](#)

Release Notes CLIB V2.16

Type: Defect, Component: TCPIP API (1 item(s))

CR Number: 1700

Type: Defect

Component: TCPIP API

Category: PKI

Synopsis: Function PKI_CertificateDel() does not match the software interrupt interface.

Description: The function misses the certType parameter.

Fix: Fixed.

Type: Suggestion, Component: I2C API functions (1 item(s))

CR Number: 1728

Type: Suggestion

Component: I2C API functions

Category: I2C_release()

Synopsis: Should change the return value.

Description: The prototype of I2C_release() should be changed, so that the function can return the I2C error code.

Fix: Implemented.

Type: New, Component: CLIB (1 item(s))

CR Number: 1727

Type: New

Component: CLIB

Category: New functions

Synopsis: Added new API functions

Description: - Add endianness conversions macros / functions. Some conversation macros are needed to address the differences between SC1x/SC2x/SC1x3 and SC2x3 endianness. They must e.g. be used at the external disk drivers (EXTSD and EXTUSB).

- BIOS_Set_Ethernet_Mode() for runtime change of ethernet mode

Fix: Implemented.

Total: 3

[Top](#)

Release Notes CLIB V2.15

Type: Defect, Component: BIOS API (1 item(s))

CR Number: 1645

Type: Defect

Component: BIOS API

Category: BIOS_Server_On_Off

Synopsis: Function BIOS_Server_On_Off is not declared correctly. It should return a value.

Description: Should change the return type from "void" to "int". Function should return if server was already in the postulated state.

Fix: Fixed.

Type: New, Component: CLIB (1 item(s))

CR Number: 1652

Type: New

Component: CLIB

Category: New functions

Synopsis: Added new API functions

Description: - Added AddStaticRouteEx()
- Added SSI_Deregister_Tag()
- Added CGI_SetRootDrive()
- Added CGI_GetRootDrive()

Fix: Add new API to library

Total: 2

[Top](#)

Release Notes CLIB V2.14

Type: Suggestion, Component: BIOS API (1 item(s))

CR Number: 1619

Type: Suggestion

Component: BIOS API

Category: Error Handler

Synopsis: Changed return value of BIOS_Install_Error_Handler().

Description: Function does now return the old handler. SC1x RTOS V1.25 (Release) or SC1x3/SC23 RTOS V1.20 (Release) required.

Fix: Implemented.

Type: New, Component: CLIB (1 item(s))

CR Number: 1618

Type: New

Component: CLIB

Category: New functions

Synopsis: Added new API functions

Description: - Added CGI_SetMainPagePost() / CGI_GetMainPagePost()
These functions allow to set a second web server main page, if the POST method is used. (Needed as a workaround for CoDeSys Web Visualisation.)

Fix: Add new API to library

Total: 2

[Top](#)

Release Notes CLIB V2.13

Type: Defect, Component: BIOS API (1 item(s))

CR Number: 1613

Type: Defect

Component: BIOS API

Category: BIOS API

Synopsis: Functions 'BIOS_Get_Hardware_Rev()' and 'BIOS_Get_Product_Hardware_Rev()' do not save registers.

Description: The registers DI respectively SI may be corrupted after this function calls.

Fix: Fixed.

Type: New, Component: CLIB (1 item(s))

CR Number: 1590

Type: New

Component: CLIB

Category: New functions

Synopsis: Added new API functions

Description: - Add helper_load_library() / helper_unload_library()

The CLIB should provide function for handling DLLs. The functions should support dynamic loading and linking of DLLs.

- Add fossil_register_external_port() / fossil_unregister_external_port()

User programs should be able to install additional (external) serial ports. This function can be used for instance to relocate existing programs, that by now used a serial interface, to USB communication.

- Add usbDeviceEnableEp()

This USB function enables or disables communication in the OUT direction (Host to Device) of an endpoint.

Fix: Add new API to library

Total: 2

[Top](#)

Release Notes CLIB V2.12

Type: Defect, Component: TCPIP API (1 item(s))

CR Number: 1577

Type: Defect

Component: TCPIP API

Category: Get_DHCP_Status()

Synopsis: The Get_DHCP_Status() function delivers garbage when used in small memory model.

Description: The register DI must be saved.

Fix: Fixed.

Type: New, Component: CLIB (1 item(s))

CR Number: 1589

Type: New

Component: CLIB

Category: New functions

Synopsis: Added new API functions

Description: Add SSL_Get_ConnState() to get internal SSL status information for WL01 EAP-TLS operation.
Add CGI_UrlDecode() to decode a URL string.
Add CGI_UrlEncode() to encode a URL string.
Add new events for FOSSIL callback operation.
Add PPP client modem control type definitions.
Add TCP socket option TCP_TS to disable/enable TCP timestamp option.
Fix: Add new API to library

Total: 2

[Top](#)

Release Notes CLIB V2.11

Type: Defect, Component: HWAPI (1 item(s))

CR Number: 1548
Type: Defect
Component: HWAPI
Category: hal_read_bus / hal_write_bus
Synopsis: These functions only use 8 bit data on SC1x3.
Description: On SC1x3 these functions should have a 16 bit data size.
Fix: Fixed.

Type: Defect, Component: I2C API (1 item(s))

CR Number: 1554
Type: Defect
Component: I2C API
Category: I2C API
Synopsis: Add missing prototype of function I2C_slave_getstate() to header file.
Description:
Fix: Fixed.

Type: New, Component: CLIB (1 item(s))

CR Number: 1555
Type: New
Component: CLIB
Category: New functions
Synopsis: Added new API functions
Description: Add BIOS_Disk_Info() to get disk drive information
Add BIOS_Disk_Space() to report number of free bytes on disk drive
Add CGI_Install_ContentEncoding_Table() to install user content-encoding table
Add CGI_Remove_ContentEncoding_Table() to remove the table
Fix: Add new API to library

Total: 3

[Top](#)

Release Notes CLIB V2.10

Type: Defect, Component: TCPIP API (1 item(s))

CR Number: 1509

Type: Defect
Component: TCPIP API
Category: IPsec
Synopsis: IPsec_Status() API does not return the error_code value properly
Description: Incorrect CPU register usage in IPsec_Status() library code
Fix: Fixed

Type: Suggestion, Component: SPI API (1 item(s))

CR Number: 1487
Type: Suggestion
Component: SPI API
Category: Dynamic Linking
Synopsis: Use dynamic linking for the SPI API
Description: SC1x3 RTOS >=V1.15 Beta offers dynamic linking for the SPI API. This feature should be usable via the CLIB.
Fix: The SPI CLIB API will use dynamic linking if the constant SPI_DYN_LINK is defined.

Type: Suggestion, Component: TCPIP API (1 item(s))

CR Number: 1488
Type: Suggestion
Component: TCPIP API
Category: Dynamic Linking
Synopsis: Use dynamic linking for the TCP/IP device driver API
Description: SC1x3 RTOS >=V1.15 Beta offers dynamic linking for the TCP/IP device driver API. This feature should be usable via the CLIB.
Fix: The TCP/IP device driver CLIB API will use dynamic linking if the constant TCPIP_DYN_LINK_DEV is defined.

Type: New, Component: CLIB (1 item(s))

CR Number: 1510
Type: New
Component: CLIB
Category: New functions
Synopsis: Added new API functions
Description: Add IPsec_IKE_Status() to access IKE error code
Add helper_check_license() to check possible future licenses
Add CGI_SetCookie() and CGI_GetCookie() to access cookies from inside CGI pages
Add CGI_GetArgument() for alternative access to CGI arguments
Add new socket options TCP_RTO_DEF, TCP_RTO_MIN and TCP_RTO_MAX
Add DEV_IOCTL_IPCFG_NOTIFY and DEV_IOCTL_IPV6CFG_NOTIFY flags
Fix: Add new API to library

Total: 4

[Top](#)

Release Notes SC1x3 CLIB V2.09

Type: Defect, Component: Fossil API (1 item(s))

CR Number: 1497

Type: Defect

Component: Fossil API

Category: FossilDriverInfo_t structure

Synopsis: Fixed typo in structure FossilDriverInfo_t in Fossil.h.

Description: Renamed structure member "ouputAvailable" to "outputAvailable".

Fix: Fixed.

Type: Suggestion, Component: Reentrant malloc (1 item(s))

CR Number: 1496

Type: Suggestion

Component: Reentrant malloc

Category: Helper

Synopsis: The C-Library's HTML should document the HEAP.C file available to Paradigm users

Description: Reentrant versions of malloc(), free() and realloc() come together as one package inside the HEAP.C source file. These reentrant versions are available only with the Paradigm Beck IPC Edition compiler. The necessary hooks into the compiler's Run-Time Library (RTL) are not available with other compilers (Borland).

Fix: The HEAP.C source file is distributed with Paradigm-Beck C-Library installation. User must link the provided HEAP.C source file directly into their project to use this reentrant heap manager.

Type: New, Component: CLIB (1 item(s))

CR Number: 1498

Type: New

Component: CLIB

Category: New functions

Synopsis: Added new API functions to support the new SC1x3 RTOS V1.12 Beta functions.

Description: Added function helper_assign_mem()

Fix: Implemented.

Total: 3

[Top](#)