RENESAS Tool News

The C/C++ Compiler Package for the SuperH RISC engine MCU Family Revised to V.9.04 Release 00

We have revised the C/C++ compiler package for the SuperH RISC engine MCU family from V.9.03 Release 02 to V.9.04 Release 00.

For general information about the compiler package, see:

  https://www.renesas.com/shc

The above URL is one of our global sites.

1. Product and Versions to Be Updated

The C/C++ compiler package V.9s for the SuperH RISC engine MCU family

2. Descriptions of Revision

2.1 Made Compatible with Windows® 7

The compiler package has been made compatible with the 64-bit and 32-bit editions of Windows® 7.

As a result, the problem described in Section 5.2-(3) of RENESAS TOOL NEWS Document No. 091120/tn1 has been resolved. For details of this problem, see:

https://www.renesas.com/search/keyword-search.html#genre=document&q=091120tn1

2.2 High-performance Embedded Workshop Updated

The High-performance Embedded Workshop included in the package has been updated from V.4.07.00 to V.4.08.00. For detailed information about this update, see RENESAS TOOL NEWS Document No. 100701/tn1 at:

https://www.renesas.com/search/keyword-search.html#genre=document&q=100701tn1

2.3 Simulator Debugger Updated

The simulator debugger included in the package has been updated from V.9.09.00 to V.9.10.00. For detailed information about this update, see RENESAS TOOL NEWS Document No. 100607/tn1 at:

https://www.renesas.com/search/keyword-search.html#genre=document&q=100607tn1

2.4 Functions Introduced in the Compiler

The following options have been introduced:

(1) Option "alias"

This option performs optimization in consideration of the type of the object that is pointed to by the pointer and is conforming to the ANSI standard.

(2) Option "nouse_div_inst"

This option suppresses the outputs by the DIVS and DIVU instructions in the SH-2A-cored MCUs

(3) Option "float_order"

This option gives a higher priority to optimization of changing the order of operations in floating-point arithmetic.

2.5 Function Introduced in the Optimizing Linkage Editor

The following option has been introduced:

(1) Option "padding"

This option makes the size of a section a multiple of the number of alignments.

If you use this option, perform the following procedure in advance:

(a) On the Build menu, select "SuperH RISC engine Standard Toolchain"

(b) In the dialog box that appears, click the Optimizing Linker tab;

then select "Other" in the Category list. "The User defined options" text box appears.

(c) Type the name -padding into the text box.

(d) Click OK.

2.6 Problems Fixed in the Compiler

The following problems have been fixed:

(1) Problem described in RENESAS TOOL NEWS Document No. 100901/tn1 (SHC-0081)

For details of the problem, see:

https://www.renesas.com/search/keyword-search.html#genre=document&q=100901tn1

(2) Problem that may cause the C4000, C4098, or C4099 internal error to arise.

(3) Problem that if the endian=little option is selected and a union is declared which has a bit field as one of its members, the offset value of the bit field may be incorrect.

(4) Problem that if the cpu=sh2e, patch=7055, and pic=1 options are all selected, the destination address of the BRAF instruction may be incorrect.

(5) Problem that if in a program a function declared without #pragma align4 is placed immediately after another function declared with #pragma align4, and this program is compiled with the -align16 or

-align32 option being selected, the top address of the function declared without #pragma align4 is not aligned in 16 bytes or 32 bytes long.

(6) Four problems described below

These arise when standard library functions are used.

(6-1) If a character string constant containing "¥0" is used as the second argument of the strcpy() function, "¥0" is copied as usual characters in the character string of the first argument.

(6-2) If the cpu=sh2e, sh2afpu, sh4, or sh4a option is selected, and a value less than -1.48852e+9 is used as the argument of the exp() function, the return value of exp() is not 0, but goes to negative infinity.

(6-3) If the -reent option is used in the library generator, the following standard functions cannot be made reentrant:
 - puts
 - putchar
 - printf
 - vprintf
 - gets
 - getchar
 - scanf

(6-4) If the cout() function is used, the second and later characters cannot be outputted to the standard output.

(7) Two problems described below

These arise when the C++ language is used.

(7-1) If the pack=1 or #pragma pack 1 option is selected, code that causes exceptions (data address errors) to arise may be generated.

(7-2) If the offsetof() function is used as the first argument of any of the following include functions, C2237(E) Illegal constant expression appears incorrectly:
 - gbr_read_byte
 - gbr_read_word
 - gbr_read_long
 - gbr_write_byte
 - gbr_write_word
 - gbr_write_long
 - gbr_and_byte
 - gbr_or_byte
 - gbr_xor_byte
 - gbr_tst_byte
 - trapa
 - trapa_svc

2.7 Problems Fixed in the Optimizing Linkage Editor

The following problems have been fixed:

(1) Problem described in RENESAS TOOL NEWS Document No. 100901/tn1
(LNK-0006)
For details of the problem, see:
https://www.renesas.com/search/keyword-search.html#genre=document&q=100901tn1

(2) Problem that may cause the L4000 internal error to arise.

(3) Problem that if the data_stuff and compress options are selected
at the same time, no symbols may be referenced during debugging.

3. How to Update Yours and Purchase the Revised Product

3.1 Updating

Online update is available free of charge. Update yours in either of
the following ways:

(1) Use AutoUpdate Utility. This service is available on and after
September 8.

(2) Download the update program of the product from:
https://www.renesas.com/shc_download
Then execute it. This site will be opened from September 7.
The above URL is one of our global sites.

3.2 First Ordering

When you place an order for the product, supply the following items
of information to your local Renesas Electronics sales office or
distributor:

Product type: C/C++ compiler package for the SuperH RISC engine family

Version No.:   V.9.04

Release No.:   Release 00

Host OS: Windows® 7, Windows Vista®, Windows® XP or Windows® 2000

NOTICE: The 64-bit editions of Windows Vista® and Windows® XP
are excluded.

For the price of the product, contact the above sales office or
distributor.