Outline

When using the CC-RX C/C++ compiler package for the RX family, note the following point.

1. Using the -fint_register option (No.44)

   Note: The number which follows the description of a precautionary note is an identifying number for the precaution.

1. Using the -fint_register Option (No.44)

1.1 Applicable Products

   CC-RX V2.00.00 to V2.06.00

1.2 Details

   The values of registers R10, R11, R12, and R13 specified for the -fint_register option(Note) might be rewritten by a function that is not a fast interrupt function.

   Note: The -fint_register option selects a general register that is used only by fast interrupt functions.
1.3 **Conditions**

This problem may arise if the following conditions are all met.

1. `-fint_register={1,2,3,4}` is specified.
2. A function other than a fast interrupt function exists\(^{(\text{Note})}\).
   
   Note: If compiler V2.00.00 is used, a function with `#pragma entry` specified meets this condition.
3. One of the following conditions is met.
   
   3-1. `-optimize` is not specified, or `-optimize={2,max}` is specified.
   3-2. The function that meets the condition (2) includes a source description that satisfies one of the following conditions.
      
      3-2-1. Automatic variables or formal arguments that use the stack to pass values are used in `memcpy()`, `memset()`, or `memmove()`.
      3-2-2. An automatic variable of structure or union type is being used for initialization or assignment.
      3-2-3. The stack size to be used by the function\(^{(\text{Note})}\) exceeds 65535.
         
         Note: This is the size of the stack area that the function references. You can check this value by using the sum of the following values:
         
         - Numeric value in the `.STACK` directive of the assembly source output by the compiler
         - Stack size to be used by a formal argument that uses the stack to pass values
      3-2-4. For structure type with `-pack` or `#pragma pack` specified, members are referenced for automatic variables or formal arguments that use the stack to pass values, and return values.
      3-2-5. An automatic variable or a formal argument that uses a stack to pass values is indirectly referenced by using a pointer of another type greater than the alignment of the formal variable.

   Example:
   
   ```c
   char a[4]; // Alignment of char[4] is 1
   *((int*)a) = 0; // Alignment of int is 4
   ```

1.4 **Workarounds**

To avoid this problem, take any of the following steps:

1. Do not specify `-fint_register={1,2,3,4}`. Alternatively, specify `-fint_register=0`.
2. Specify `-optimize={0,1}` and change the source program so that it does not match any of the conditions (3-2-1) to (3-2-5).

1.5 **Schedule for Fixing the Problem**

This problem will be fixed in CC-RX V2.07.00. This information will be available from July 20.
### Revision History

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