

[Notes]

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Rev.1.00

Nov. 20, 2025

C/C++ Compiler Package for RX Family (No. 70)

Outline

When using the CC-RX C/C++ Compiler Package for RX Family, note the following point.

1. Note on using the `-avoid_cross_boundary_prefetch` option (No.70)

*The number in the parentheses is the identification number of the note.

1. Note on Using the `-avoid_cross_boundary_prefetch` Option (No.70)

1.1 Applicable Products

CC-RX V2.07.00 to V3.07.00

1.2 Details

When you build a program including the `strncmp()` string operation library function with the `-avoid_cross_boundary_prefetch` option, incorrect code may be generated.

1.3 Conditions

The value returned by `strncmp()` may be wrong when both conditions (1) and (2) listed below are met.

- (1) The code includes a call of the `strncmp()` string operation library function.
- (2) Either of (2-1) or (2-2) below is satisfied.
 - (2-1) All of the following conditions (2-1-1) to (2-1-3) are satisfied.
 - (2-1-1) The `-avoid_cross_boundary_prefetch` compiler option is in use.
 - (2-1-2) The `-library=intrinsic` compiler option is in use (`strncmp()` is expanded as a sequence of instructions).
 - (2-1-3) The third parameter of `strncmp()`, which indicates the number of strings to be compared, is not a constant.
 - (2-2) Both of (2-2-1) and (2-2-2) below are satisfied.
 - (2-2-1) The library is generated with the use of the `-avoid_cross_boundary_prefetch` library generator option.
 - (2-2-2) The `-library=function` compiler option is in use (`strncmp()` is not expanded as a sequence of instructions).

[Example]

An example of commands and code that will cause the problem is given below.

```
ccrx -isa=rxv3 -avoid_cross_boundary_prefetch -library=intrinsic tp.c // (2-1-1),(2-1-2)
```

```
/* tp.c */
#include <stdio.h>
#include <string.h>
int len = 3;
char s1[] = "abcdef";
char s2[] = "defghi";
void main(void)
{
    if (strncmp(s1,s2,len) == 0) { // (1), (2-1-3)
        printf("Actual result¥n");
    }
    else {
        printf("Expected result¥n");
    }
}
```

In this example, strings s1 and s2 differ, so strncmp() should return a non-zero value and “Expected result” should be output. However, strncmp() erroneously returns 0, so “Actual result” will be output.

1.4 Workaround

Take either of the following actions.

- Do not use the -avoid_cross_boundary_prefetch option.
- Set the third parameter of strncmp() as a constant if conditions (2-1) would otherwise be satisfied.

1.5 Schedule for Fixing the Problem

This problem will be fixed in the next version. The release date has not been determined.

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Nov.20.25	-	First edition issued

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