

CS+ Integrated Development Environment

Outline

When using the CS+ integrated development environment, note the following point.

- 1. Using the watch panel

1. Using the Watch Panel

1.1 Applicable Products

- CS+ Integrated Development Environment for CC V6.00.00 and later versions
- [Evaluation edition] CS+ Integrated Development Environment for CC V6.00.00 and later versions

1.2 Applicable MCUs

- All MCUs of the RH850 Family, RX Family, and RL78 Family that support CS+ for CC

1.3 Details

When using an emulator or simulator, if a value of the variable is updated on the watch panel, a memory leak occurs in CS+.

For this reason, if you continue to perform debugging, CS+ may terminate abnormally.

1.4 Conditions

If a value of the variable is updated on the watch panel, a memory leak occurs in CS+ and causes the memory consumption in PC to increase. Note that the amount of leak will reach the maximum when you select to automatically update the value of watch-expressions while executing a program.

Approximate amount of time from the initial memory leak until CS+ abnormally terminates is as follows:

- Worst case: Approximately 1 minute
- Standard case (reference): Approximately 4 hours

The approximated amount of time applies when CS+ is operated under the following conditions:

Use conditions	Worst case	Standard case
(a) Number of valid events	30	10
(b) Number of registered watch-expressions	50	10
(c) Project file path size (bytes)	200 bytes	100 bytes
(d) Display count per second	10 times	2 times
Amount of memory leak per second Calculation formula: (a)*(b)*4*(c)*(d)	$30*50*4*200*10$ ≈ 11.5 MB/s (690 MB/min)	$10*10*4*100*2$ ≈ 79 KB/s (4.7 MB/min = 282 MB/h)
Display update interval	100 ms (minimum)	500 ms (specified value)
Free memory in the process	700 MB	1 GB

1.5 Workaround

There is no workaround to avoid this issue entirely in using the watch panel, however, you can reduce the amount of memory leak by applying the following methods:

- Delete unnecessary events.
- Decrease the number of variables registered as watch-expressions or delete them.
- Shrink down the path size of a project file. (ex. placing it directly under the drive.)
- Increase the value of [Display Update Interval(ms)] in the [Property Panel] → [Debug Tool Settings] tab in your debug tool.
- Close or hide the watch panel or shrink its display size.
- Upgrade the specification of your PC.
 - PC with 64-bit OS and RAM 4 GB or more
- If you are using CS+ earlier than V7.00.00, upgrade the version to V7.00.00 or later. (It may increase the time until the abnormal termination by up to three times.)

1.6 Schedule for Fixing the Problem

This problem will be fixed in the next version update of CS+, which is schedule to be released in January 2018.

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Sep. 16, 2018	-	First edition issued

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