

[Featured Tools]

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Rev.1.00

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Improve Performance by Upgrading the C Compiler for RH850 Family from Renesas at Reasonable Cost!

Introduction of the Upgrade (Version) License

Outline

We would like to introduce a low-cost license that you can use to upgrade the C compiler for RH850 family from Renesas (CC-RH) from V1 to V2.

By upgrading to V2, you can expect to see performance improvements in a system equipped with an RH850 MCU.

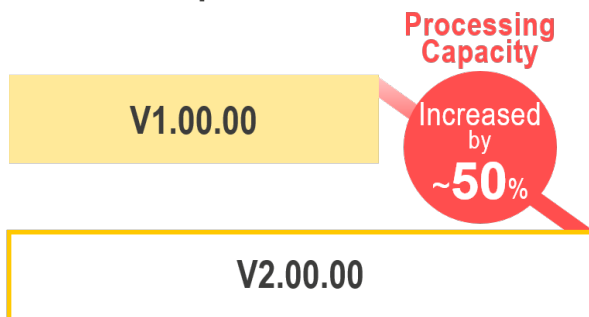
1. Expected Performance Improvements in an RH850 MCU-Equipped System After Upgrading CC-RH

1.1 Generated-Code Efficiency Improvement

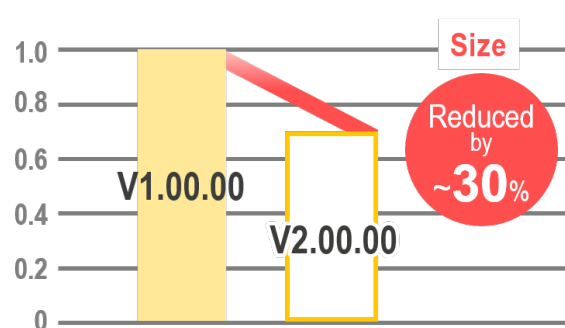
Codes generated by the compiler become increasingly more efficient as CC-RH is updated.

The following graphs show the results of comparative tests (Note) for execution speed and code size for V1 and V2, respectively. Upgrading from V1.00.00 to V2.00.00 shows a significant increase in code efficiency.

Execution Speed



Code Size



(Note): The comparative tests were performed on a benchmark program for embedded systems using a same MCU with the same option settings. The improvement will depend on the program used.

1.2 Expansion of Available Functions

In addition to improved generated-code efficiency, V2 also brings functional enhancements.

The following lists some of the functional enhancements to V2 (CC-RH V2.02.00) from V1.

- Link-Time Optimization
Analyzes the entire program and deletes unused functions and variables to reduce the code size.
- Inline Expansion of Standard Library Functions
Instruction expansion, based on techniques such as floating-point operation instructions, shortens some of the standard library function calls (requiring multiple instructions) to a single instruction (at minimum).
- C99 Standard Library Functions
C-language standard C99 standard library functions (total of 49 functions) are now available.

2. Upgrade (Version) License: An Outstanding Upgrade Opportunity for V2

CC-RH needs a different license for each version. This means V1 (V1.**.**) and V2 (V2.**.**) are separate licenses. Therefore, you need a V2 license to use V2.

However, if you own a V1 license, you can use V2 by purchasing an additional Upgrade (version) license. You do not need to purchase a new V2 license. Note that these licenses are not available as annual licenses.



Features

- **More cost-effective than purchasing a V2 license.**
- **The V1 license will remain valid. You will be able to use both V1 and V2.**

If you are a V1 licensee, purchase an Upgrade (version) license to enjoy the improved performance of an RH850 MCU-based system at reasonable cost!

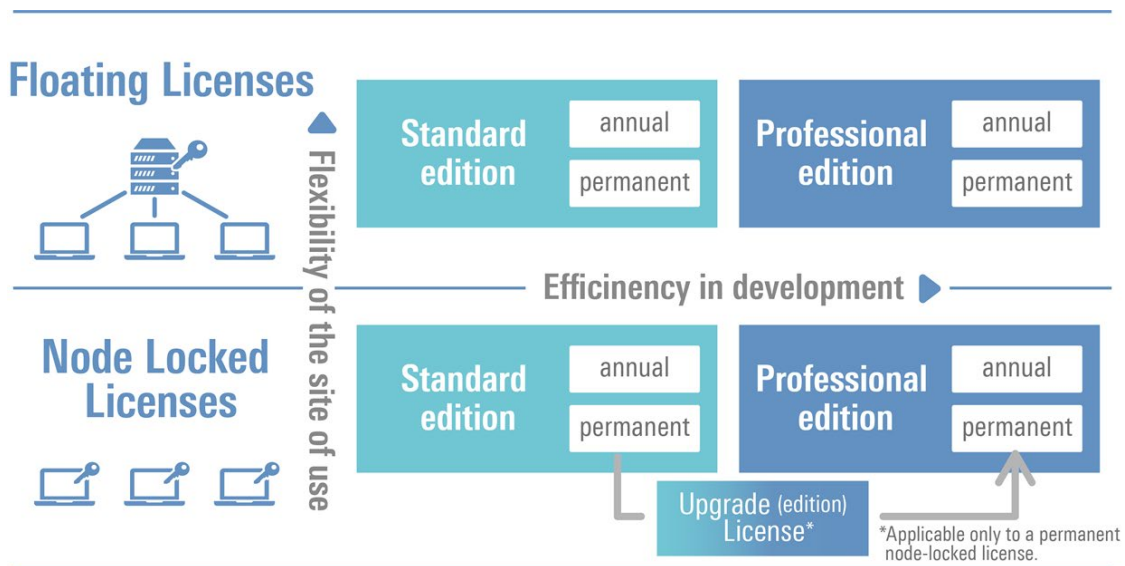
3. Introducing Other Compiler Licenses

For the CC-RH package from Renesas, the following licenses are available in addition to a floating license and a node-locked license:

- Standard license and professional license (they differ in compiler additional functions)
- Annual license and permanent license (they differ in effective period)

There is also an Upgrade (edition) license for upgrading the standard edition to the professional edition.

Choose an optimum combination of licenses depending on your development needs.



For more information about licenses, see the compiler license web page below.

https://www.renesas.com/compiler_licenses

4. Purchasing the Product

For product ordering, contact your local Renesas Electronics sales office or distributor.

Refer to the CC-RH web page for more information.

https://www.renesas.com/rh850_c

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Apr.16.20	-	First edition issued

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