

Release Notes: GCC 4.8.0.201603-GNURX

5th of October, 2016

CyberThor Studios Ltd. is releasing the GCC 4.8.0.201603-GNURX, a cross compiler tool for Renesas RX micro-controllers.

SALIENT FEATURES

The GCC 4.8.0.201603-GNURX toolchain is based on:

- ❖ GCC 4.8.0 [released]
- ❖ Binutils 2.24 [released]
- ❖ Newlib 2.2.0 [released]
- ❖ GDB 7.8.2 [released]

The latest patches are applied to GCC, Binutils and Newlib sources.

ABOUT GCC 4.8.0.201603-GNURX

Release Version:	GCC 4.8.0.201603-GNURX
Release Date:	5 th of October, 2016
Platforms Supported:	Red Hat GNU/Linux v8.0 or later (or compatible distribution) Windows XP, Windows 7, Windows 8, Windows 10
Language:	C, C99, C++
Targets:	RX100 RX200 RX600 RX64M RX700
Object File Format:	ELF



CHANGES IN THE GCC 4.8.0.201603-GNURX

This section describes the fixes made in the GCC 4.8.0.201603-GNURX release.

GCC/Binutils:

1. -fwhole-program is a very useful optimization technique, unfortunately in case of RX/RL78 it removes the .fvector and .rvector tables and all the interrupt handlers.

This issue has been fixed.

2. bsr can do maximum a 24 bit jump not 32 bit like jsr which sometimes is not enough. For example if in a function there are multiple calls to another function, GCC can generate only one mov.l instruction and multiple jsr instructions. Because jsr is only 2 bytes long at some point the mov.l combination becomes more code size efficient than bsr.

This improvement has been implemented.

3. GNURX toolchain has builtin functions for bit manipulation instructions (BSET, BNOT, BCLR) when dest is a register. Now the toolchain supports builtin functions when dest is a memory location.

This improvement has been implemented.

4. The RX toolchain fsub instruction does not load the correct values for its parameters for RX64M target causing the subtraction to fail.

This issue has been fixed.

5. The GNURX compiler generates the following warning "foo.c:3: warning: format '%f' expects type 'double', but argument 2 has type 'float' "when -m32bit-doubles and -Wall parameters are passed. This is unnecessary because float is promoted to double in variadic functions.

This issue has been fixed.

INSTALLER and RPM:

1. The GCC 4.8.0.201603-GNURX Installer onwards supports the 'Custom Installation' and 'Default Installation' modes. The 'Default Installation' mode is set by default where the tools are installed into the default location at "C:\Program Files\GCC 4.8.0.201603-GNURX" and the user's username and activation key are silently accepted if cached in the registry.
2. The GNURL78 ABI (Application Binary Interface) is made available on our GNU Tools support website (<https://gcc-renesas.com>) and also provided along with Linux RPM and Windows installer.

Notes:

This installer does not provide an option to integrate the GNURL78 toolchain with e2 studio, as the e2 studio IDE will automatically detect the GNURL78 toolchain installation on start-up for integration. Alternatively, you may use the 'Toolchain Management' feature in e2 studio to achieve this.

For details on e2 studio please visit the following link below:

http://www.renesas.com/products/tools/ide/ide_e2studio/index.jsp

There is no support in this installer to integrate toolchain with the HEW IDE.



FREE SUPPORT FOR GCC 4.8.0.201603-GNURX

For free technical support, please register at
<https://gcc-renesas.com>

For your feedback and suggestions, please visit
<https://gcc-renesas.com/help/contact-us/>

