

Release Notes: GNURX v14.03

30th September 2014

KPIT Technologies Limited is releasing the GNURX v14.03, a cross compiler tool for Renesas RX micro-controllers.

SALIENT FEATURES

1. The GNURX v14.03 toolchain is based on
 - GCC 4.8.3 [released],
 - Binutils 2.24 [released],
 - Newlib 2.1.0 [released] and
 - GDB 7.7.1 [released].
2. The latest patches are applied to gcc, binutils and newlib sources.
3. The GNURX toolchain comes with bug fixes and more code size optimization.

ABOUT GNURX v14.03

Release Version:	GNURX v14.03
Release Date:	30 th September 2014
Platforms Supported:	Red Hat GNU/Linux v8.0 or later (or compatible distribution) Windows XP, Windows 7 (32-bit and 64-bit)
Language:	C, C99, C++
Targets:	RX100 RX200 RX600 RX64M
Object File Format:	ELF

CHANGES IN THE GNURX-ELF v14.03 RELEASE

This section describes the enhancements made and the issues fixed in the v14.03 release.

GCC:

1. The GNURX toolchain generates 'jsr' instruction when -mjsr option is passed to the toolchain. In certain cases the toolchain generated the 'bsr' instruction when optimization was enabled.

This issue has been fixed.

2. The rx-elf-objcopy utility generates incorrect address in the mot file, which does not match with the linker script address, in certain test scenarios.

This issue has been fixed.

3. The GNURX toolchain option '-fdump-passes' did not generate correct results.

This issue has been fixed.

4. The GNURX toolchain generates incorrect alignment for labels when the options '-falign-labels=n' is used.

This issue has been fixed.

GDB:

1. GNURX gdb has been enhanced to edit the PSW register bits related to "IPL" (Processor Interrupt Priority Level) dynamically.
2. GNURX gdb has been enhanced to add a new command '-symbol-list-lines-range' which is similar to '-symbol-list-lines' and provides the end_pc value in the output.
3. GNURX gdb has been enhanced to add a new "noentry_load" command. This command allows to load a new module file while debugging other module without modifying the PC register.

Libraries:

1. The project built newlib libraries did not include support for the setjmp and longjmp functions.

This issue has been fixed.

2. While building optlib libraries using libgen tool, the user can get more optimized code for stdio functions by passing the following macro under compiler options, "-DOPTLIB_NO_FLOAT_SUPPORT".

INSTALLER and RPM:

1. The GNURX v11.01 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 and the user's username and activation key are silently accepted if cached in the registry.
2. The GNURX ABI (Application Binary Interface) is made available on www.kpitgnutools.com website and also provided along with Linux RPM and Windows installer.
3. The GNURX v14.03 Installer will install the toolchain at the default location at "C:\Program Files\KPIT" in the "Default Installation" mode and "Custom Installation" mode.

From GNURX v14.01 onwards, the installer does not provide an option to integrate the GNURX toolchain with e2 studio, as the e2 studio IDE will automatically detect the GNURX 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 refer following link,
http://www.renesas.com/products/tools/ide/ide_e2studio/index.jsp

Note:

From the GNURX v14.02 release onwards, there is no support to integrate toolchain with the HEW IDE.

KNOWN LIMITATIONS IN RX-ELF

This section describes the known limitations in this release. We intend to fix these issues in our future releases.

We occasionally release maintenance packs for critical bug fixes.

Windows and GNU/Linux:

1. Library Generator: Please visit the following link for the known issues and limitations related to this utility:
<http://www.kpitgnutools.com/phpmyfaq/index.php?aktion=artikel&rubrik=010002&id=485&lang=en>
2. The optimized libraries provided along with the newlib libraries in the toolchain do not require a separate download.
3. The optimized libraries ('liboptm.a' and 'liboptc.a') are not provided under GNU GPL. The source code of these optimized libraries is neither released nor available on request.
4. The "libgen" utility is not provided under GNU GPL. The source code of the "libgen" utility is neither released nor available on request.

For free technical support, please register at

<http://www.kpitgnutools.com>

For your feedback and suggestions, please visit

<http://www.kpitgnutools.com/feedback.php>