Release Notes: GNURX v12.03

23rd November 2012

KPIT Cummins Infosystems Limited is releasing the GNURX v12.03, a cross compiler tool for Renesas RX micro-controllers.

SALIENT FEATURES

1. The GNURX v12.03 toolchain is based on
   GCC 4.7.2 [released],
   Binutils 2.22 [released],
   Newlib 1.20.0 [released] and
   GDB 7.5 [released].
2. The latest patches are applied to gcc, binutils and newlib sources.

ABOUT GNURX v12.03

Release Version:	GNURX v12.03
Release Date:	23rd November 2012
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:	RX200 RX600
Object File Format:	ELF

CHANGES IN THE GNURX-ELF v12.03 RELEASE

This section describes the enhancements made and the issues fixed in the v12.03 release.

GCC:

1. The GNURX toolchain was in certain cases not compatible with the Renesas RPDL libraries.

   This issue has been fixed.

2. The GNURX toolchain was not able to recognize the W_1 section supported by the RXC toolchain causing it to be incompatible with certain RPDL libraries.

   This issue has been fixed.

3. The GNURX toolchain did not initialize constructors in big endian mode.

   This issue has been fixed.

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 HEW (if found) 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.

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. Some of the debug information is not generated for projects built using the "-flto" optimization option and therefore source address is not visible while debugging in HEW.

2. The GNURX v12.03 toolchain may generate following errors for libraries or objects built using older versions or external tools,

   {

   ```
   rx-elf-ld.exe: There is a conflict merging the ELF header flags from dhcp-c.o
   rx-elf-ld.exe: the input  file's flags: 32-bit doubles, no dsp, no pid, GCC ABI
   rx-elf-ld.exe: the output file's flags: 32-bit doubles, no dsp, no pid, RX ABI
   ```

   }

   To suppress these errors, please pass the option "--no-flag-mismatch-warnings" to the linker. You may also pass the same option during compilation, using the "-Wl,--no-flag-mismatch-warnings" option.

3. 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

HEW (For Windows OS only):

1. The 'Generate Makefile' feature is currently not supported in HEW.
2. For other limitations pertaining to the single interface for the compiler, assembler, linker and library generator, please visit the following link:

   http://www.kpitgnutools.com/phpmyfaq/index.php?aktion=artikel&rubrik=003001&id=445&lang=en
3. If the GNURX v12.03 toolchain is installed in a directory with spaces, linking using '-flto' (Link Time Optimization) fails in HEW. This is due to GCC 4.7.2 limitation. On command line, short path is used and hence, there is no problem in linking using '-flto'.

   Please refer to the below FAQ for details and work-around,
   http://www.kpitgnutools.com/phpmyfaq/index.php?aktion=artikel&rubrik=003001&id=523&lang=en
4. On Windows 7, HEW crashes occasionally while upgrading the projects created using earlier versions of toolchains.
   To avoid this crash, please launch HEW in 'Windows XP' Compatibility mode. You can select it from, HEW executable or shortcut Properties -> Compatibility -> Compatibility mode -> Run this program in compatibility mode for -> 'Windows XP'

Windows and GNU/Linux:

1. The optimized libraries provided along with the newlib libraries in the toolchain do not require a separate download.
2. 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.
3. The "libgen" utility is not provided under GNU GPL. The source code of the "libgen" utility is neither released nor available on request.

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   For your feedback and suggestions, please visit http://www.kpitgnutools.com/feedback.php