

Release Notes: GNURX v11.01 (MP1)

23rd March 2011

KPIT Cummins Infossystems Limited is releasing the GNURX v11.01, a cross compiler tool for Renesas RX micro-controllers.

SALIENT FEATURES

1. The GNURX v11.01 toolchain is based on gcc-4.5.2 [released], binutils-2.21 [released], newlib-1.18.0 [released] and gdb-7.2.50 [snapshot dated 7th December 2010].
2. The latest patches are applied to gcc, binutils and newlib sources.
3. The GNURX v11.01 toolchain supports link time optimization (LTO) for Linux as well as MinGW toolchains.
4. The GNURX v11.01 toolchain supports pid (position independent data) on enabling "-mpid" switch while compiling the application. Please visit the following link for information on pid support for GNURX toolchain:
<http://www.kpitgnutools.com/phpmyfaq/index.php?aktion=artikel&rubrik=010002&id=498&lang=en>
5. The GNURX v11.01 ELF toolchain installer also supports integration with KPIT Eclipse v2.1 and the later versions.
Please visit the following link for information on the latest releases of KPIT Eclipse:
<http://www.kpitgnutools.com/releaseNotes.php>

ABOUT GNURX v11.01

Release Version:	GNURX v11.01 (Maintenance Pack 1)
Release Date:	23 rd March 2011
Platforms Supported:	Red Hat GNU/Linux v8.0 or later (or compatible distribution) Windows NT / 2000 / XP / Vista / Windows 7
Language:	C, C99, C++
Targets:	RX200 RX600
Object File Format:	ELF

CHANGES IN THIS RELEASE

This section describes the enhancements made and the issues fixed in the v11.01 release.

GCC:

1. The toolchain is built with '-flto' option which enables link time optimization.
2. The implementation of handling global constructor initialization in GNURX toolchain is different from Renesas toolchain. Hence, the default C++ project in HEW and Eclipse IDE did not invoke the global constructor initialization correctly. This issue has now been fixed.
3. The GNURX toolchain has been further optimized to achieve the improved CoreMark benchmark score of 2.24 on simulator. This score is an improvement over the previous GNURX release.
4. The GNURX toolchain was corrupting the argument passed to a function on enabling '-Os' optimization. This bug has now been fixed.
5. The GNURX toolchain generated internal compiler error (ICE) for certain test cases with '-mmax-constant-size=1' compiler option. This bug has now been fixed.

HEW and KPIT Eclipse (For Windows OS only):

1. The GNURX v11.01 toolchain installer supports integration with HEW 4.07, KPIT Eclipse v2.1 and the later versions.

CHANGES IN THE RX-ELF v11.01 MAINTENANCE PACK 1 RELEASE

1. Certain toolchain utilities like library generator require specific environment variables to be set on the Windows 7. The absence of these causes the utilities to fail on the Windows 7 setup.

The issue has now been fixed.

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. The GNURX toolchain has an issue related to the '-fstrict-aliasing' compiler option which gets enabled for optimization level '-O2' and above. Please turn off this option using the '-fno-strict-aliasing' compiler option in case of any inconsistent behaviour with this toolchain.
2. The 'mvtipl' option does not work with non-RX610 mode.
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>
4. The GNURX compiler generates incorrect result for sqrt function when the toolchain uses optlib in project built mode. This issue is not present with pre-built optlib libraries or newlib libraries.

HEW (For Windows OS only):

1. The 'Generate Makefile' feature is currently not supported in HEW.

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>

Eclipse (For Linux OS only):

1. The 'Debugging in simulator' feature in KPIT Eclipse v2.1 for Linux may exhibit some issues while working with GNURX ELF v10.02 or later toolchain objects. This is due to the enhanced GDBRX version. These issues will be fixed in the KE update release.

NOTE:

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.

For free technical support, please register at <http://www.kpitgnutools.com>

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