

Release Notes: GCC 4.9.2.201902-GNURL78

22nd of April, 2019

CyberThor Studios Ltd. is releasing the GCC 4.9.2.201902-GNURL78, a cross compiler tool for Renesas RL78 micro-controllers.

SALIENT FEATURES

The GCC 4.9.2.201902-GNURL78 toolchain is based on:

- ❖ GCC 4.9.2 [released]
- ❖ Binutils 2.24 [released]
- ❖ Newlib 3.1.0 [released]
- ❖ GDB 7.8.2 [released]

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

ABOUT GCC 4.9.2.201902-GNURL78

Release Version:	GCC 4.9.2.201902-GNURL78
Release Date:	22 nd of April, 2019
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:	G1X, I1X, D1X, LIN MCP, F1X, and L1X
Object File Format:	ELF



CHANGES IN GCC 4.9.2.201902-GNURL78

This section describes the fixes made in the GCC 4.9.2.201902-GNURL78 release.

BINUTILS:

1. *[Bug Fix]* *Objdump* decoded instructions as *g14* specific instructions.

GCC:

1. *[Bug Fix]* Fixed the unexpected result generated when comparing to a global pointer

NEWLIB:

1. *[Improvement]* Updated to newlib version 3.1.0
2. *[Improvement]* Nano libraries are now available. To use *newlib-nano*, users should provide additional *gcc* compile and link time option. *-specs=nano.specs* should be passed along with *-specs=sim.specs* if *msim* would be needed, else if *msim* is not needed *-specs=lnosys.specs* should be passed along with *nano.specs*.

For example:

```
$ rl78-elf-gcc test.c --specs=nano.specs -specs=sim.specs $(OTHER_OPTIONS)
```

3. *[Improvement]* Optimized string functions
4. *[Bug Fix]* Added *KEEP* syntax for the *frodata* section into the default linker-script

INSTALLER and RPM:

1. The GCC 4.9.2.201902-GNURL78 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 4.9.2.201902-GNURL78" 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.



This section describes the known issues in the GCC 4.9.2.201902-GNURL78 release.

1. ES is used without being initialized.

Workaround:

In order to initialize ES, the address should be stored in a *far* pointer before usage. So instead of:

```
((volatile reg __far*)0x000FFF).bit._1 = 0;
```

the code will be:

```
volatile reg __far *address0 = 0x000FFF;  
(*address0).bit._1 = 0;
```

2. The `__far` keyword is not supported for C++ projects.



FREE SUPPORT FOR GCC 4.9.2.201902-GNURL78

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/>

