e² studio V7.0.1 Linux Host Public Beta for RZ

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Release Note

Introduction

This document outlines the supported OS and device support in e² studio V7.0.1 for Linux Host.

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1. Product Information

1.1 Supported Operating Systems

These operating systems are officially supported by e² studio:

- Ubuntu 18.04 LTS 64-bit version

1.2 Supported Toolchains

The following toolchains are supported in e² studio V7.0.1:

Linaro GCC – tested version 7.2.1-2017.11

Product Information Device Support

1.3 Project Generator Support

Family	Group	Devices
RZ	A1	R7S721000, R7S721000_DualSPI, R7S721001, R7S721001_DualSPI, R7S721010, R7S721010_DualSPI, R7S721011, R7S721011_DualSPI, R7S721020, R7S721020_DualSPI, R7S721021, R7S721021_DualSPI, R7S721030, R7S721030_DualSPI, R7S721031, R7S721031_DualSPI, R7S721034, R7S721034_DualSPI
	G	R8A77430, R8A77450 R8A77430_Core1, R8A77450_Core1,(Debug Support Only)
	G1C	R8A77470
	G1H	R8A77420
	G1N	R8A77440
	T1	R7S910001, R7S910002, R7S910006, R7S910007, R7S910011, R7S910013, R7S910015, R7S910015_M3, R7S910016, R7S910016_M3, R7S910017, R7S910017_M3, R7S910018, R7S910018_M3, R7S910025, R7S910026, R7S910027, R7S910028, R7S910035, R7S910036, R7S910101, R7S910102, R7S910106, R7S910107, R7S910111, R7S910113, R7S910115, R7S910115_M3, R7S910116, R7S910116_M3, R7S910117, R7S910117_M3, R7S910118, R7S910118_M3, R7S910125, R7S910126, R7S910127, R7S910128, R7S910135, R7S910136

2. What is new in e² studio V7.0.1 Linux Host?

Component	Device	Description
RZ debugging	RZ Family devices	Linux Host support is provided for e² studio to support the RZ device family. The use cases allow the following cases: • Linux target OS debugging for RZ/G and RZ/A1. • Segger J-link debugging for RZ on Linux Host

2.1 Overview

The public beta version e² studio is based on e² studio V7.0.0 for windows. Therefore, documents of e² studio will be helpful for common usages. This part describes mainly how to install public beta version e² studio for Linux and set configurations of debug functions have dependencies of Linux environment.

2.2 How to install

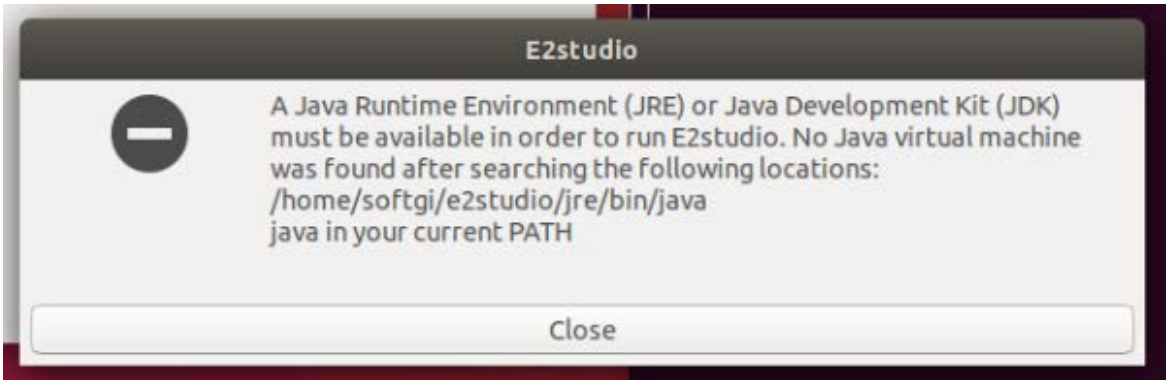
Installation steps of public beta version e² studio for Linux

A) Download archived file from download page. You can find download page by searching 'e² studio V7.0.1 for Linux, public beta edition' from the list shown as clicking 'Download the installer' button at e² studio product information web page (https://www.renesas.com/e2_studio).

B) Extract the downloaded archived file (extension *.7z) into local storage.

C) Please install JRE 1.8 (Java 8) 64bit version.
Ubuntu install command example (The internet connection is required.):
sudo apt-get install openjdk-8-jre

Error Message in below will appear, if JRE (Java Runtime Environment) is not installed and try to run e² studio.



2.3 How to run

A) Administrator privilege is required for debugging or some other features which demand file access authentication.

B) Run 'terminal' application of Linux.

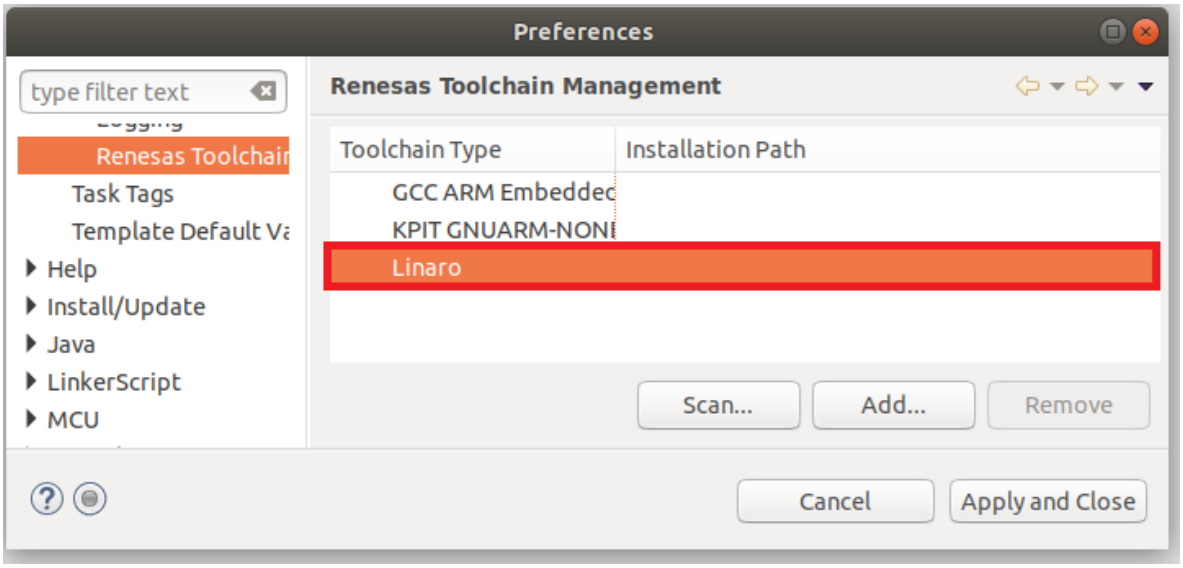
C) Move installed directory and Run 'e2studio' binary file.
(example of executing command with administrator privilege at installed directory: sudo ./e2studio)

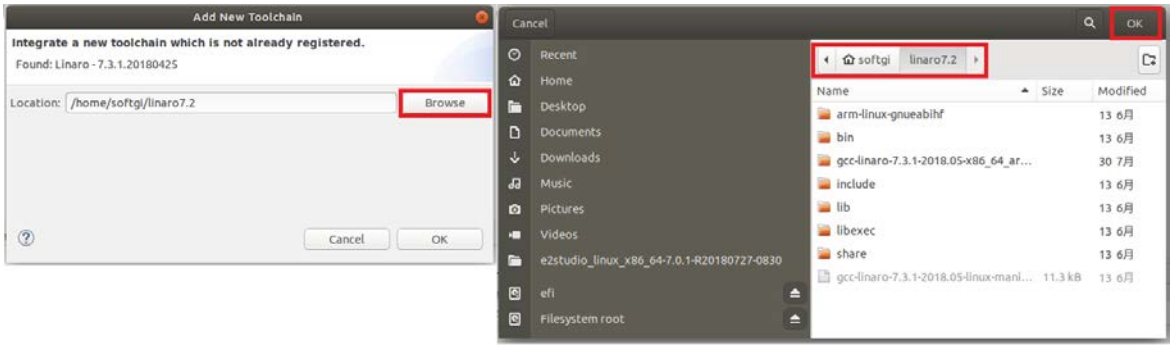
2.4 Register toolchain to e² studio

A) Download and extract a toolchain package file to arbitrary directory.

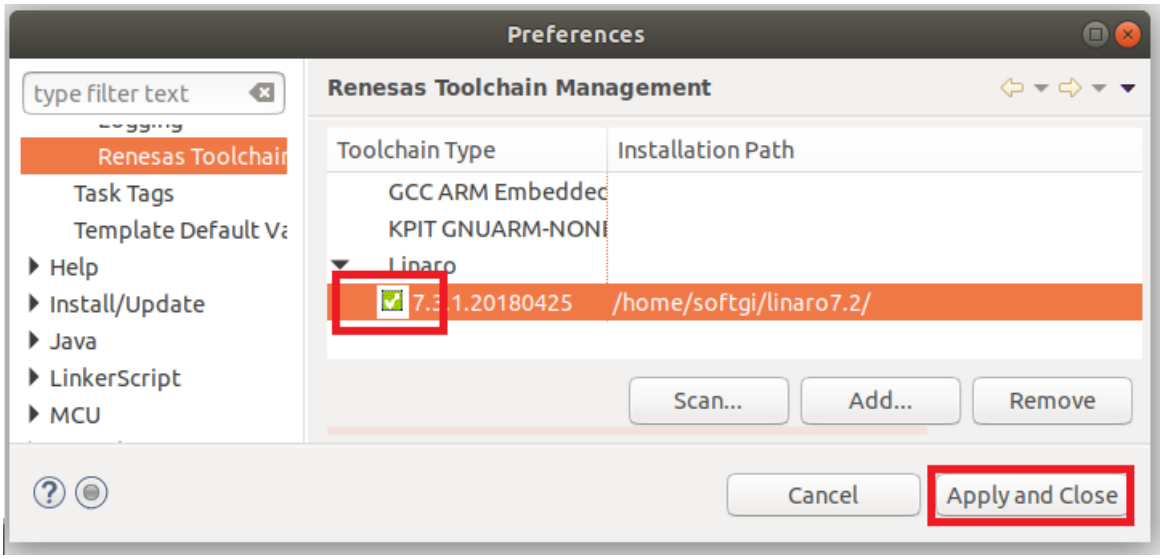
B) Run ‘e2studio’ and select ‘Help – Add Renesas Toolchains’

C) Select ‘Toolchain Type’ and ‘Add’ Location of toolchain.





D) Click checkbox of added toolchain and restart e² studio.



2.5 How to build and debug Linux application

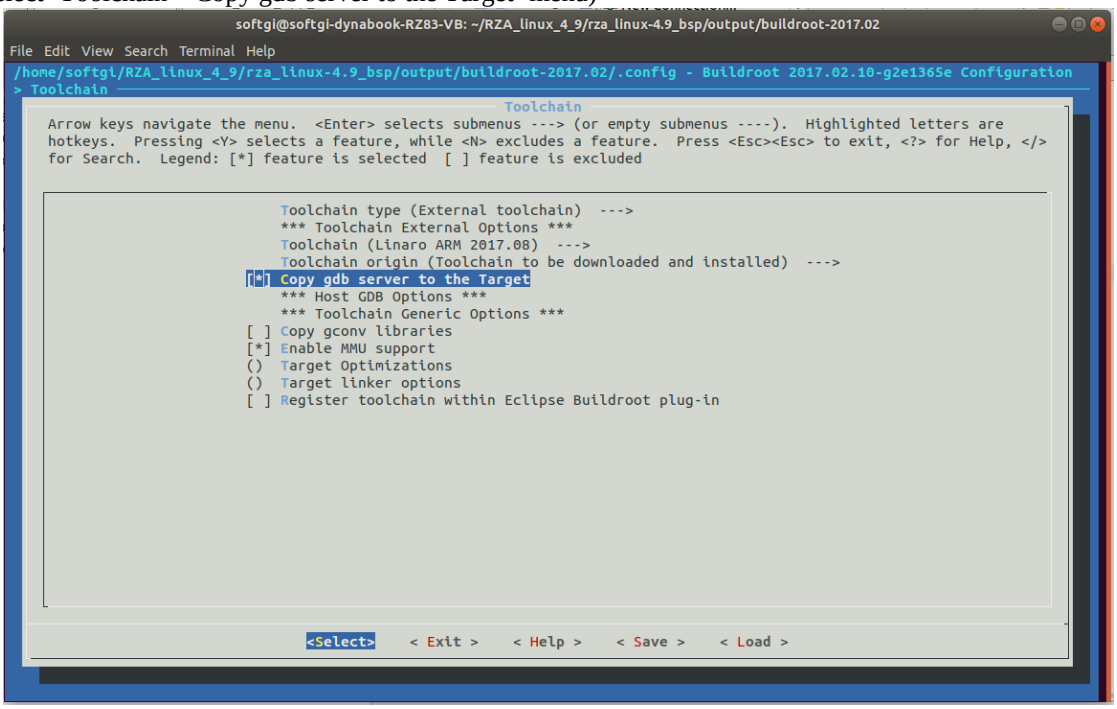
Public beta version e² studio for Linux supports building and debugging Linux applications for devices of RZ/A Group and RZ/G Group. For debugging by GDB (the GNU Project Debugger), please add Linux programs gdb-server program to Linux file system of devices and run as back ground process automatically. (ssh-server, tcf-agent will be needed for connection between host system and target device.) For detail about building Linux image for RZ family devices, refer to embedded Linux wiki pages (https://elinux.org) or Renesas Rulz web pages about RZ family (https://renesasrulz.com/rz). Descriptions in below is based on RZ/A1H case.

2.5.1. How to add gdb-server to RZ/A Linux root file system

A) Build root file system of RZ/A1 Linux-4.9 BSP.
(path example: ~/rza_linux-4.9_bsp/, command example: ./build.sh buildroot)

B) Move to 'buildroot-***' directory in 'output'.
(path example : ~/rza_linux-4.9_bsp/output/buildroot-2017.02)

C) Run menuconfig (make menuconfig) and add gdb-server.
(Select 'Toolchain－Copy gdb server to the Target' menu)



D) Move to 'target' directory in 'output' of 'buildroot-****'.
(path example: ~/rza_linux-4.9_bsp/output/buildroot-2017.02/output/target)

E) Add new file with a line as command at '/etc/init.d' directory

File name: S51gdbserver Command: /usr/bin/gdbserver --multi --remote-debug /dev/ttySC0

F) Delete or disable below contents from etc/inittab.

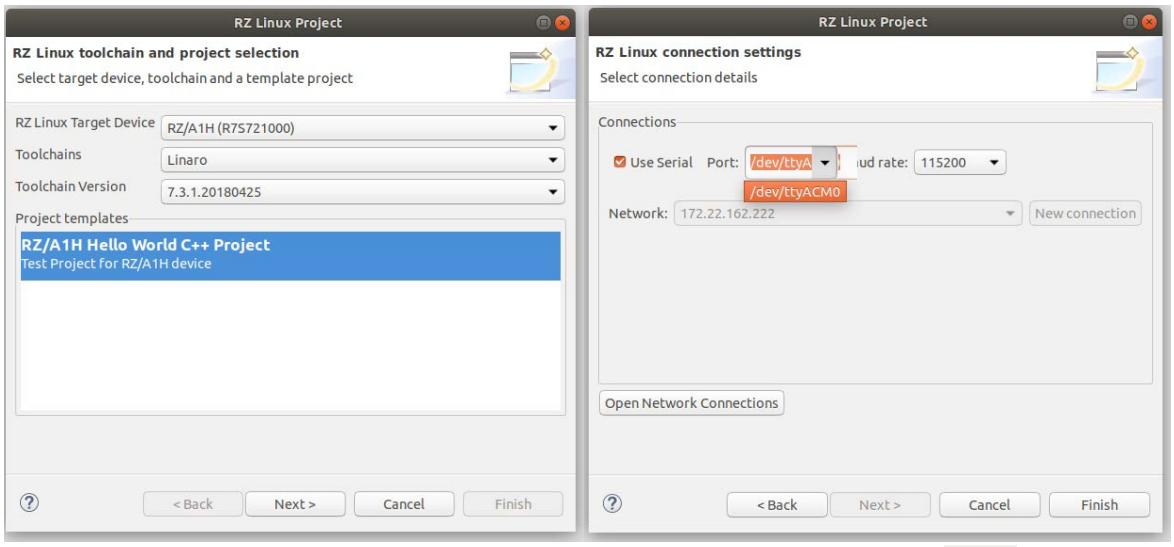
Put a getty on the serial port # ttySC0::respawn:/sbin/getty -L ttySC0 115200 vt100 # GENERIC_SERIAL

G) Move 'Linux-4.9 BSP root' (path example: ~/rza_linux-4.9_bsp/) and build root file system again. Download root file system at target device.

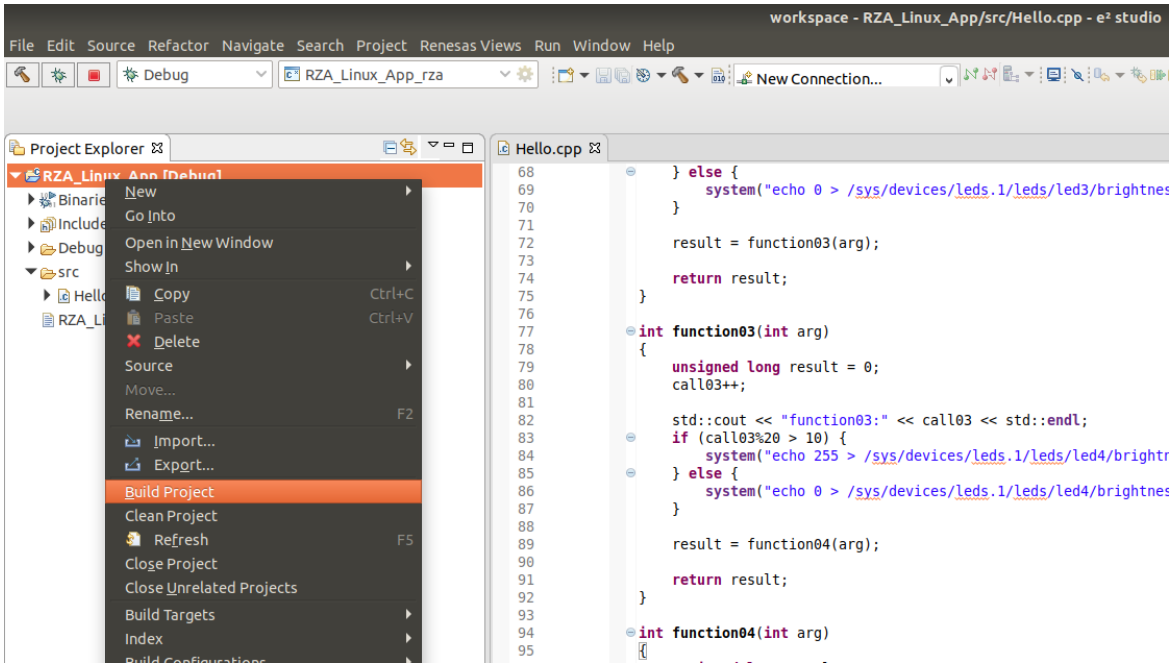
2.5.2. Linux C/C++ Project generation and build

A) Connect target device which is run as Linux, via Serial port.

B) Select 'File – New - RZ Linux C/C++ project' menu and make new RZ/A1H Linux C/C++ project. In phase of 'RZ Linux connection settings', the serial port which is used for connecting target device, will be selected automatically.



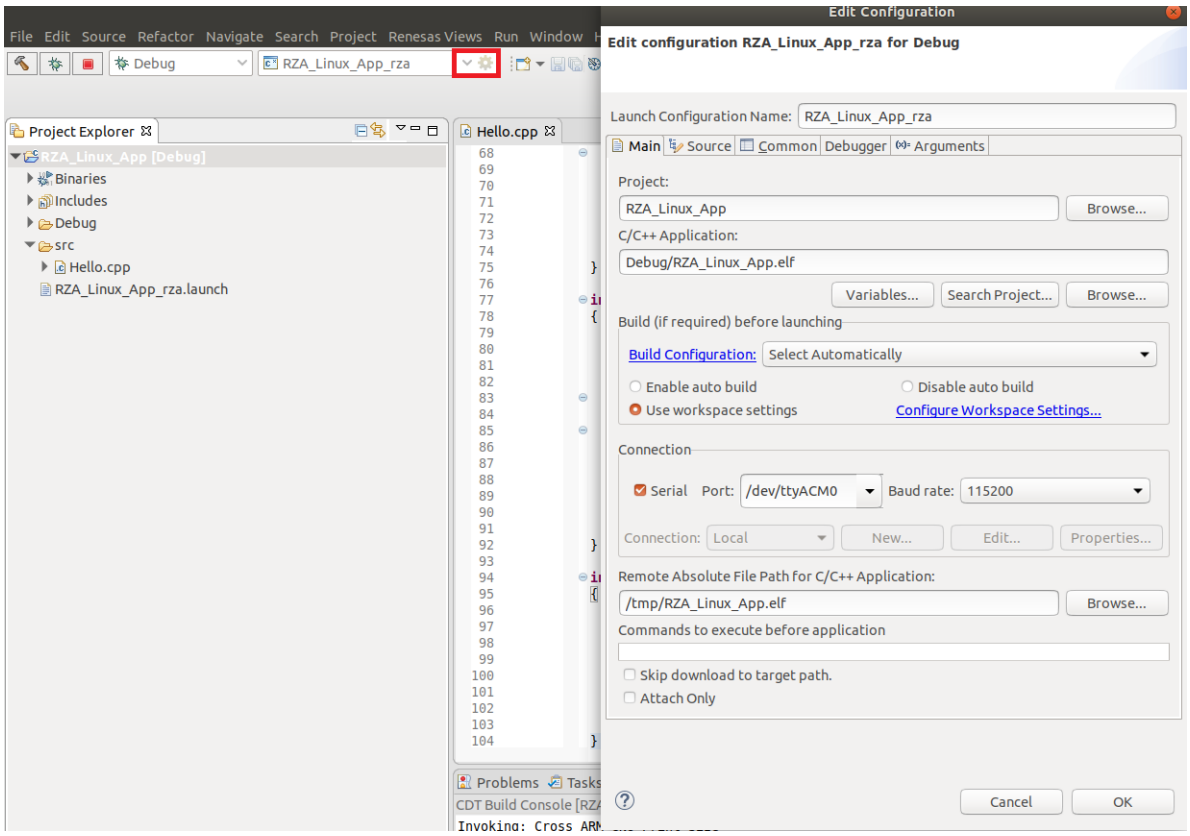
C) After editing codes, build by selecting 'Build Project' in right-click menu or push  button.



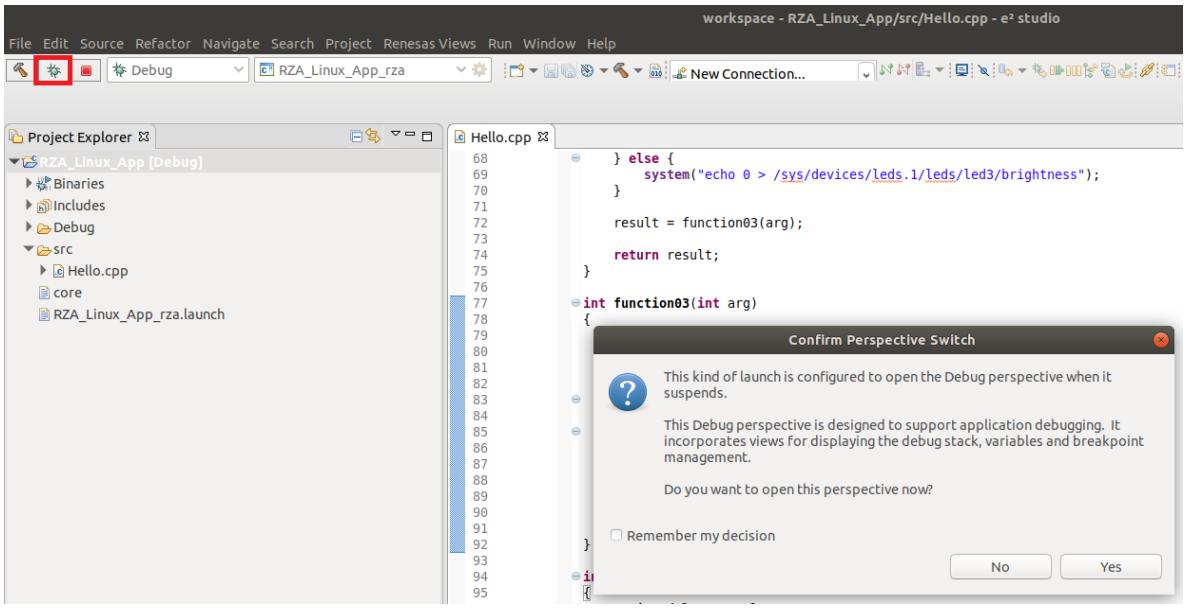
2.5.3. GDB debug by using serial port communication

A) Terminate all processes use serial port communication such as Minicom.

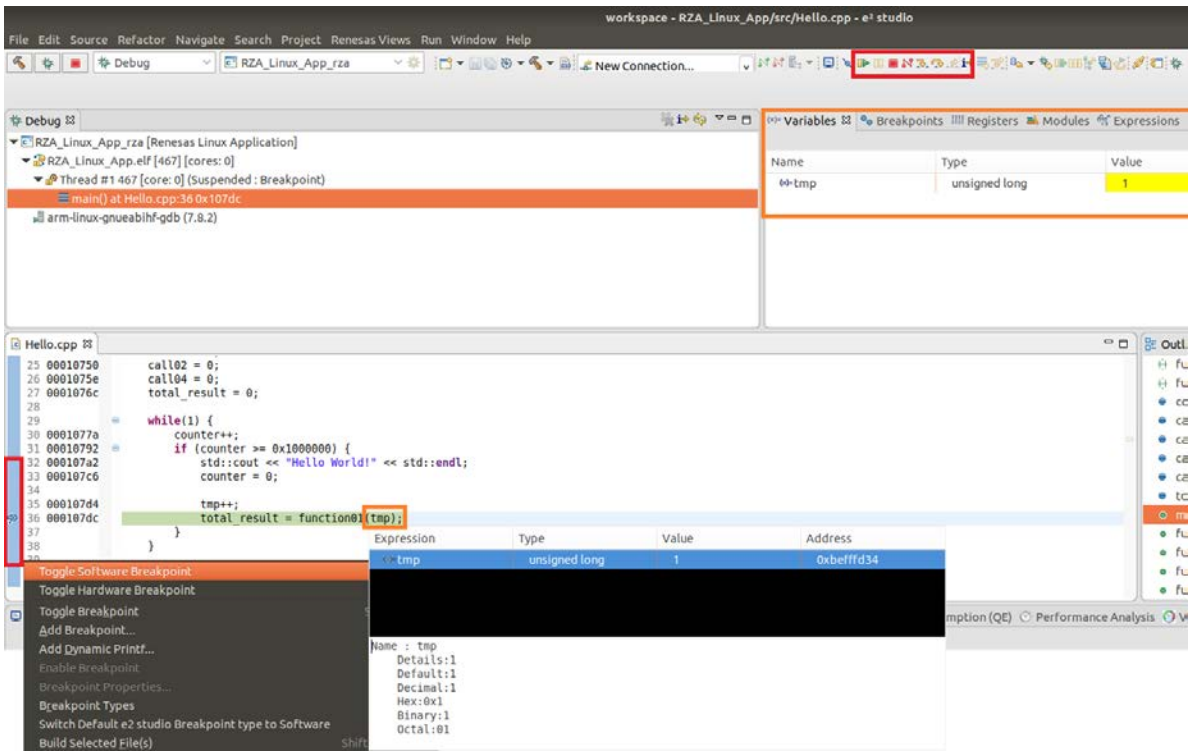
B) Open ‘Configuration’ and check ‘Serial’ is selected as ‘Connection’.



C) Run debug by push button  . It takes 10 or more seconds for transferring binary files to target device. Pop up message for switching to debug perspective will be shown after transferring binary files.



D) ‘Debug Perspective’ provide ways for flow controls and configurations. This public beta version e2 studio for Linux doesn’t have console view for showing result of the program.
(Under development) For more detail, please see user manuals of e² studio Windows edition.



3. Appendix

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