



GNU MCU Eclipse及插件的安装和配置

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04 配置项目

01 下载安装 IDE for C/C++ Developers

GNU MCU Eclipse IDE for C/C++ Developers

- 下载地址: <https://github.com/gnu-mcu-eclipse/org.eclipse.epp.packages/releases/>

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 20200127-1311-gnumcueclipse-4.7.2-2019-12-R-linux.gtk.x86_64.tar.gz	247 MB
 20200127-1311-gnumcueclipse-4.7.2-2019-12-R-linux.gtk.x86_64.tar.gz.sha	134 Bytes
 20200127-1311-gnumcueclipse-4.7.2-2019-12-R-macosx.cocoa.x86_64.tar.gz	241 MB
 20200127-1311-gnumcueclipse-4.7.2-2019-12-R-macosx.cocoa.x86_64.tar.gz.sha	137 Bytes
 20200127-1311-gnumcueclipse-4.7.2-2019-12-R-win32.win32.x86_64.zip	247 MB
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 Source code (zip)	
 Source code (tar.gz)	

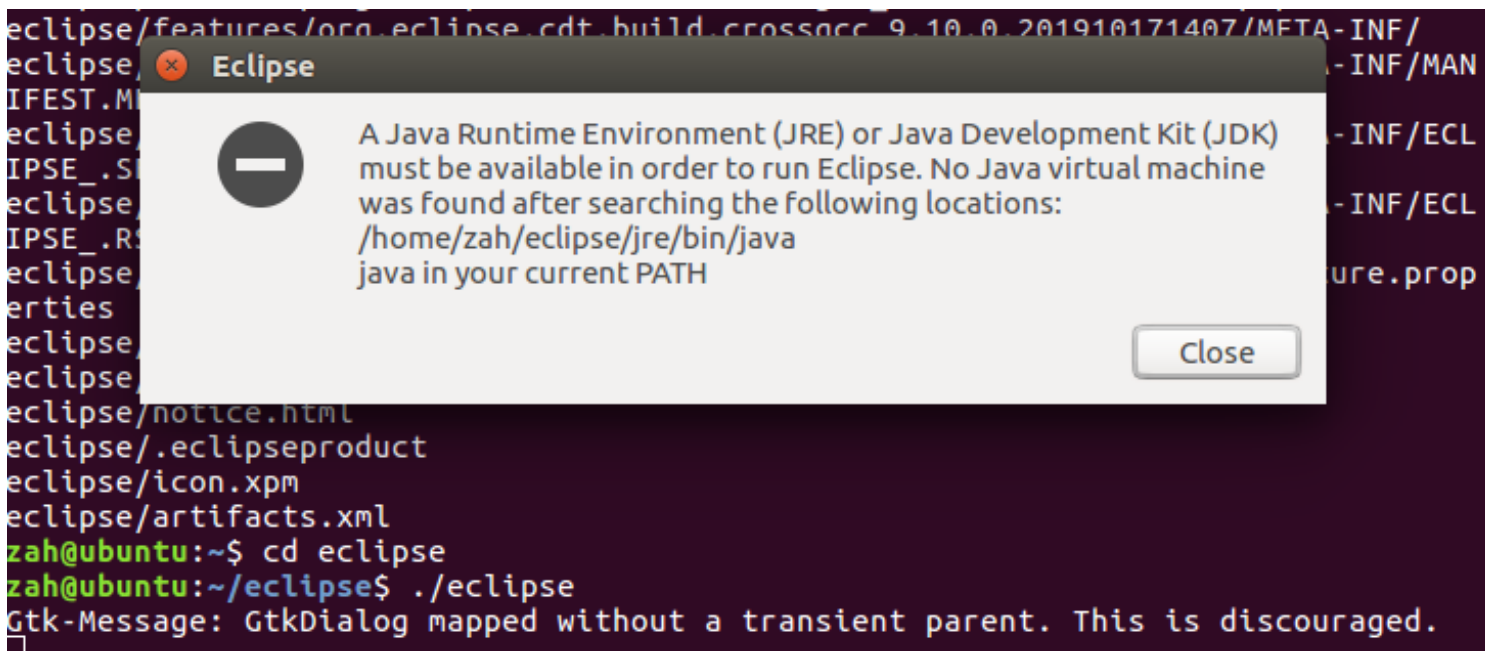
01 下载安装 IDE for C/C++ Developers

GNU MCU Eclipse IDE for C/C++ Developers

- 解压安装包

```
zah@ubuntu:~$ tar -xzvf 20200127-1311-gnumcueclipse-4.7.2-2019-12-R-linux.gtk.x86_64.tar.gz
```




- 无法运行



01 下载安装 IDE for C/C++ Developers

下载安装 JDK

- Oracle官网下载地址: <https://www.oracle.com/java/technologies/javase-jdk8-downloads.html>

Linux x86 Compressed Archive	186.6 MB	 jdk-8u251-linux-i586.tar.gz
Linux x64 RPM Package	171.16 MB	 jdk-8u251-linux-x64.rpm
Linux x64 Compressed Archive	186.09 MB	 jdk-8u251-linux-x64.tar.gz

01 下载安装 IDE for C/C++ Developers

下载安装 JDK

- 解压JDK安装包：在 /usr/local 下创建了新文件夹 java，将安装包移动到该文件夹下，用 tar -zxvf {name of file} 命令解压。
- 配置环境：用 sudo vim /etc/profile 命令进入配置文件，配置环境变量。

```
export JAVA_HOME=/usr/local/jdk/jdk1.8.0_241
export JRE_HOME=$JAVA_HOME/jre
export CLASSPATH=.:$CLASSPATH:$JAVA_HOME/lib:$JRE_HOME/lib
export JAVA_PATH=$JAVA_HOME/bin:$JRE_HOME/bin
export PATH=$PATH:$JAVA_PATH
:wq
```

- 更新文件：用 source /etc/profile 命令，立即更新文件。之后重启终端。
- 测试：输入命令 java -version，若显示其版本信息，则安装配置成功。

```
zah@ubuntu:~$ java -version
java version "1.8.0_241"
Java(TM) SE Runtime Environment (build 1.8.0_241-b07)
Java HotSpot(TM) 64-Bit Server VM (build 25.241-b07, mixed mode)
zah@ubuntu:~$
```

- 重新执行 eclipse 则可成功打开

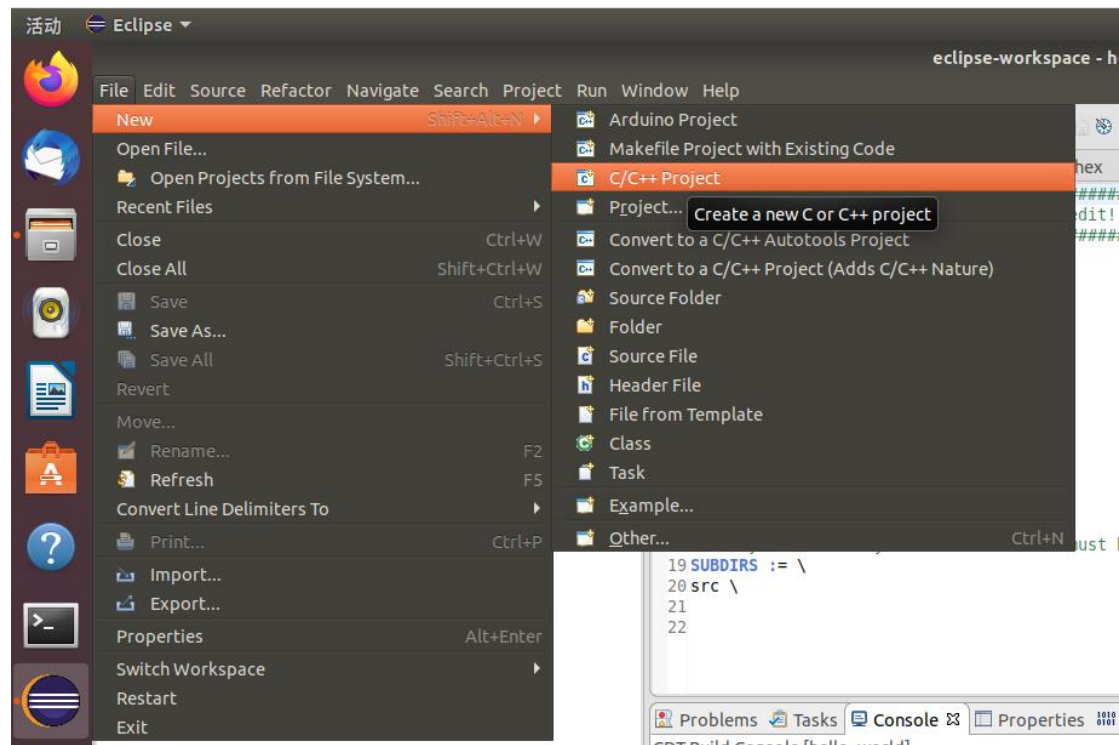
参考资料：

[1] https://blog.csdn.net/qq_42815754/article/details/82968464

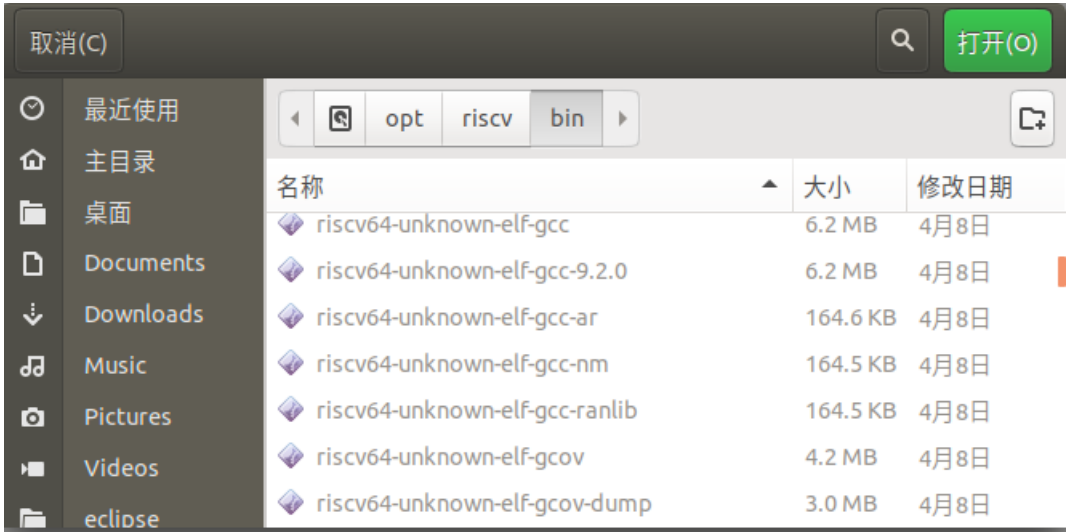
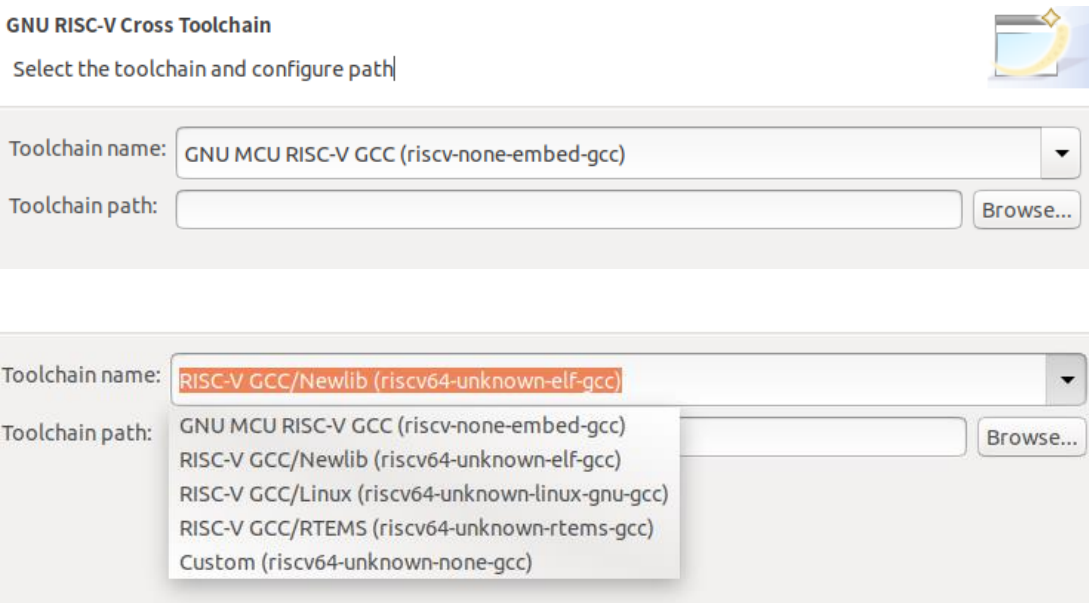
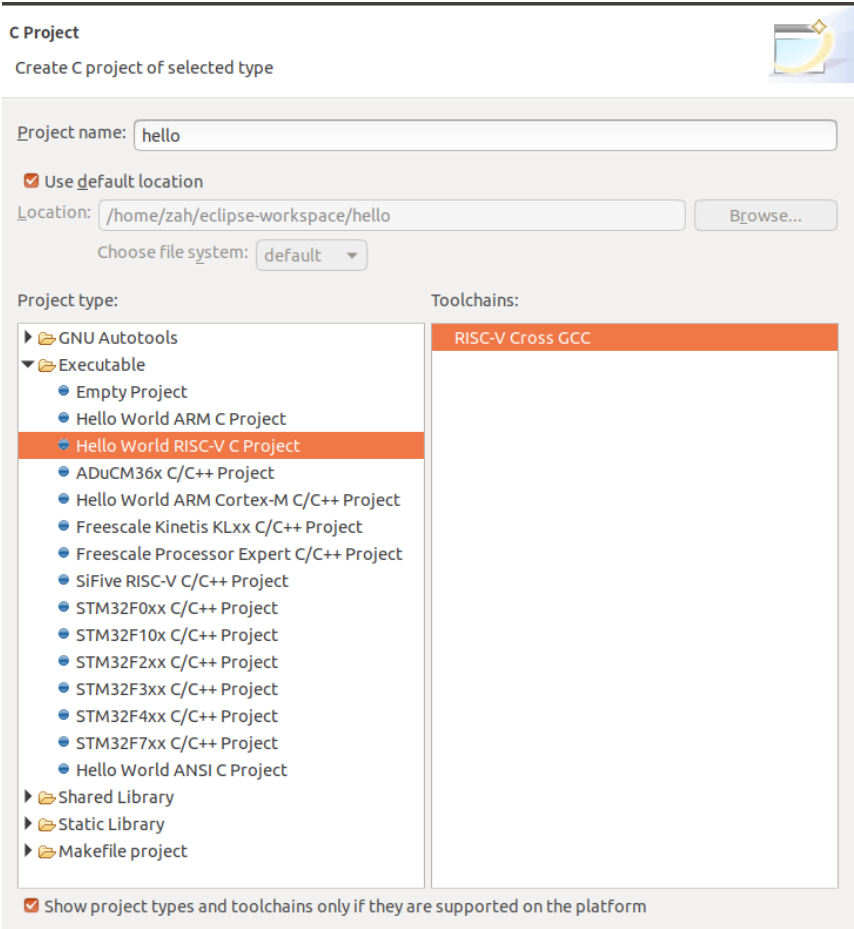
[2] https://blog.csdn.net/hua_faded/article/details/80535870

02 初尝试构建项目

创建项目

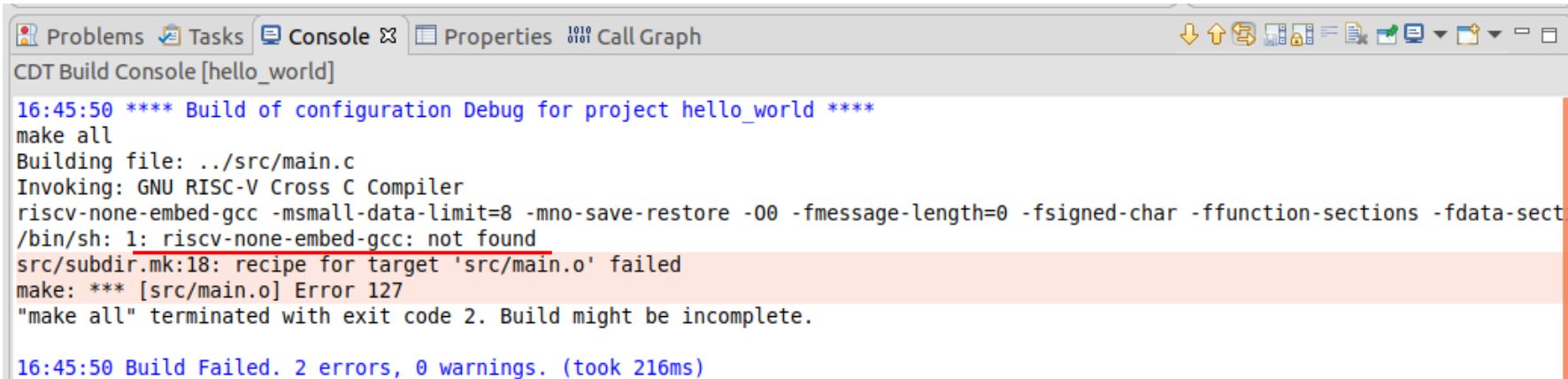
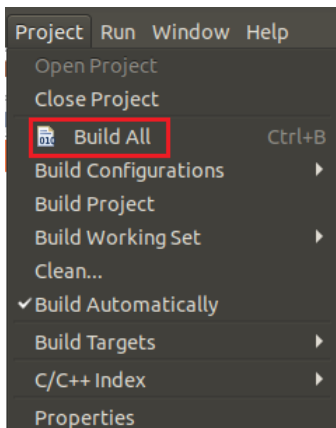


创建项目



02 初尝试构建项目

遇到的问题



分析

- The RISC-V corner

// Downloads

- GNU MCU Eclipse IDE for C/C++ Developers
- GNU MCU Eclipse plug-ins
- GNU MCU Eclipse Windows Build Tools
- xPack GNU RISC-V Embedded GCC
- xPack OpenOCD

- Plus-ins

GNU MCU Eclipse IDE for C/C++ Developers 2019-12 20200127 which pack together the 2019-12 version (Eclipse 4.14) of the Eclipse IDE for C/C++ Developers standard distribution with the GNU MCU Eclipse plug-ins.

- Windows Build Tools

Only binaries for **Windows** are provided.

They were built with mingw-w64, and run on any reasonably recent **i686** and **x86_64** Windows machines.

参考资料:

[1] <https://gnu-mcu-eclipse.github.io/arch/riscv/>

[2] <https://github.com/eclipse-embed-cdt/eclipse-plugins/releases>

[3] <https://gnu-mcu-eclipse.github.io/blog/2019/04/22/windows-build-tools-v2-12-20190422-released/>

03 下载安装 xPack GNU RISC-V Embedded GCC

xPack

- GitHub 网址: <https://github.com/xpack-dev-tools/riscv-none-embed-gcc-xpack>

Easy install

The easiest way to install GNU RISC-V Embedded GCC is using the binary xPack, available as `@xpack-dev-tools/riscv-none-embed-gcc` from the `npmjs.com` registry.

Prerequisites

The only requirement is a recent `xpm`, which is a portable [Node.js](#) command line application. To install it, follow the instructions from the `xpm` page.

Install

With the `xpm` tool available, installing the latest version of the package is quite easy:

```
$ xpm install --global @xpack-dev-tools/riscv-none-embed-gcc@latest
```

03 下载安装 xPack GNU RISC-V Embedded GCC

xpm

- 页面网址: <https://xpack.github.io/xpm/install/>

Prerequisites [🔗](#)

A recent [Node.js](#) ($\geq 8.x$), since the ECMAScript 6 class syntax is used, and a recent [npm](#).

For details, please read (carefully!) the [prerequisites](#) page.

xpm install

Windows

macOS

GNU/Linux

On GNU/Linux, by default, global Node.js packages are installed in `/usr/local`, and managing them requires administrative rights, but if you followed the instructions in the [prerequisites](#) page, you should already have configured npm to use a location in the home folder.

With the environment properly set, the command to install xpm is:

```
$ npm install --global xpm@latest
```

03 下载安装 xPack GNU RISC-V Embedded GCC

nvm、npm

- 页面网址: <https://xpack.github.io/install/>

nvm install (node version manager)

Node.js can be installed manually, but for a greater flexibility, on POSIX platforms it is possible to automate this process by using nvm, which not only simplifies the install procedure, but also allows advanced users to install multiple versions of Node.js in parallel. For details, see the [Using a Version Manager to install Node.js and npm](#) page.

When everything is clean, run the install script:

```
$ curl -o- https://raw.githubusercontent.com/nvm-sh/nvm/master/install.sh | bash
```

遇到问题

- 本地

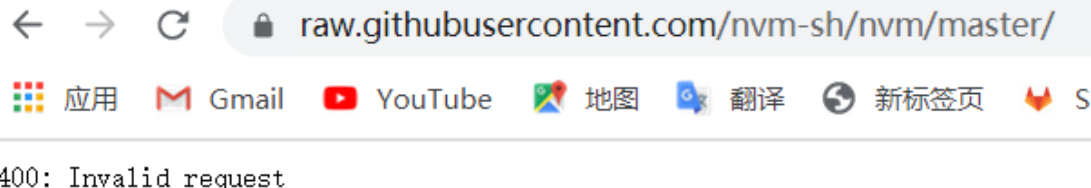
无法访问此网站

找不到 **raw.githubusercontent.com** 的服务器 IP 地址。

尝试运行 [Windows 网络诊断](#)。

DNS_PROBE_FINISHED_NXDOMAIN

- VPN



03 下载安装 xPack GNU RISC-V Embedded GCC

解决问题的过程

- GitHub 网址: <https://github.com/nvm-sh/nvm>

Install & Update Script

To install or update nvm, you should run the [install script](#). To do that, you may either download and run the script manually, or use the following cURL or Wget command:

```
curl -o- https://raw.githubusercontent.com/nvm-sh/nvm/v0.35.3/install.sh | bash
```

- 安装 node、npm 与安装 xpm 的网址: <https://xpack.github.io/install/> ; <https://xpack.github.io/xpm/install/>

```
$ nvm install --lts node
```

```
$ nvm use node
```

```
$ nvm install-latest-npm
```

```
$ npm install --global xpm@latest
```

```
$ sudo apt install npm
```

```
$ npm install --global xpm
```

- 安装 xPack 教程网址: <https://github.com/xpack-dev-tools/riscv-none-embed-gcc-xpack>

```
$ xpm install --global @xpack-dev-tools/riscv-none-embed-gcc@latest
```

03 下载安装 xPack GNU RISC-V Embedded GCC

解决问题的过程-手动安装工具链

- GitHub 网址: <https://github.com/xpack-dev-tools/riscv-none-embed-gcc-xpack>

Manual install

For all platforms, the xPack GNU RISC-V Embedded GCC binaries are released as portable archives that can be installed in any location.

The archives can be downloaded from the [GitHub Releases](#) page.

For more details please read the [Install](#) page.

- GitHub Release 网址: <https://github.com/xpack-dev-tools/riscv-none-embed-gcc-xpack/releases/>

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 xpack-riscv-none-embed-gcc-8.3.0-1.1-darwin-x64.tgz	301 MB
 xpack-riscv-none-embed-gcc-8.3.0-1.1-darwin-x64.tgz.sha	118 Bytes
 xpack-riscv-none-embed-gcc-8.3.0-1.1-linux-x32.tgz	307 MB
 xpack-riscv-none-embed-gcc-8.3.0-1.1-linux-x32.tgz.sha	117 Bytes
 xpack-riscv-none-embed-gcc-8.3.0-1.1-linux-x64.tgz	303 MB
 xpack-riscv-none-embed-gcc-8.3.0-1.1-linux-x64.tgz.sha	117 Bytes

03 下载安装 xPack GNU RISC-V Embedded GCC

解决问题的过程-手动安装工具链

- 安装教程网址: <https://xpack.github.io/riscv-none-embed-gcc/install/>

Unpack

To install GNU RISC-V Embedded GCC, unpack the archive and copy it to `/${HOME}/opt/xPacks/riscv-none-embed-gcc/<version>`:

```
$ mkdir -p ~/opt
$ cd ~/opt

$ tar xvf ~/Downloads/xpack-riscv-none-embed-gcc-8.2.1-3.1-linux-x64.tgz
$ chmod -R -w xPacks/riscv-none-embed-gcc/8.2.1-3.1
```

Note: For manual installs, the recommended install location is slightly different from the xpm install folders, which use the scope (like `@xpack-dev-tools`) to group different tools, and `.content` to store the unpacked archive.

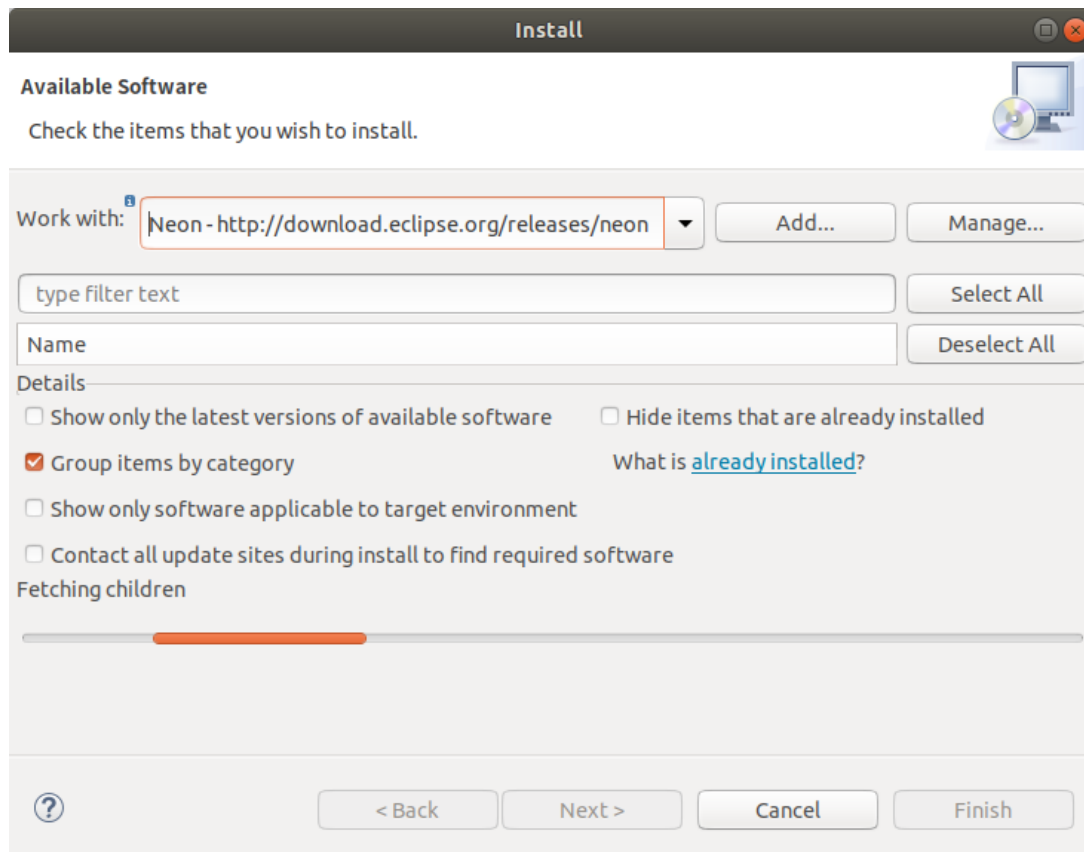
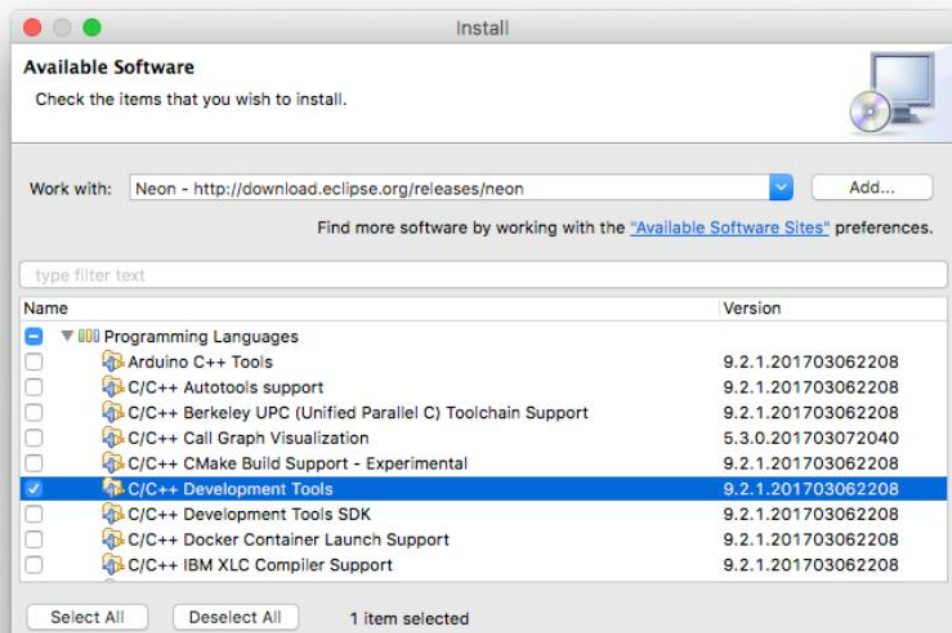
Important: Although perfectly possible to install GNU RISC-V Embedded GCC in any folder, it is highly recommended to use this path, since by default the GNU MCU Eclipse debug plug-ins search for the executable in this location.

03 下载安装 xPack GNU RISC-V Embedded GCC

利用IDE添加工具

- 官网教程地址: <https://gnu-mcu-eclipse.github.io/plugins/install/>
- 在 Eclipse 的菜单中选择 Help -> Install New Software

- select *Work with:* **Neon** (or more recent)
- if the *Group items by category* is enabled, expand the **Programming Languages** group
- select the **C/C++ Development Tools** feature
- click the **Next** button and follow the usual installation procedure



04 配置项目

配置编译器

GNU RISC-V Cross Toolchain

Select the toolchain and configure path



Toolchain name: GNU MCU RISC-V GCC (riscv-none-embed-gcc)

Toolchain path: /home/zah/opt/xPacks/@xpack-dev-tools/riscv-none-embed-gcc/8.3.0-1.1/bin Browse...

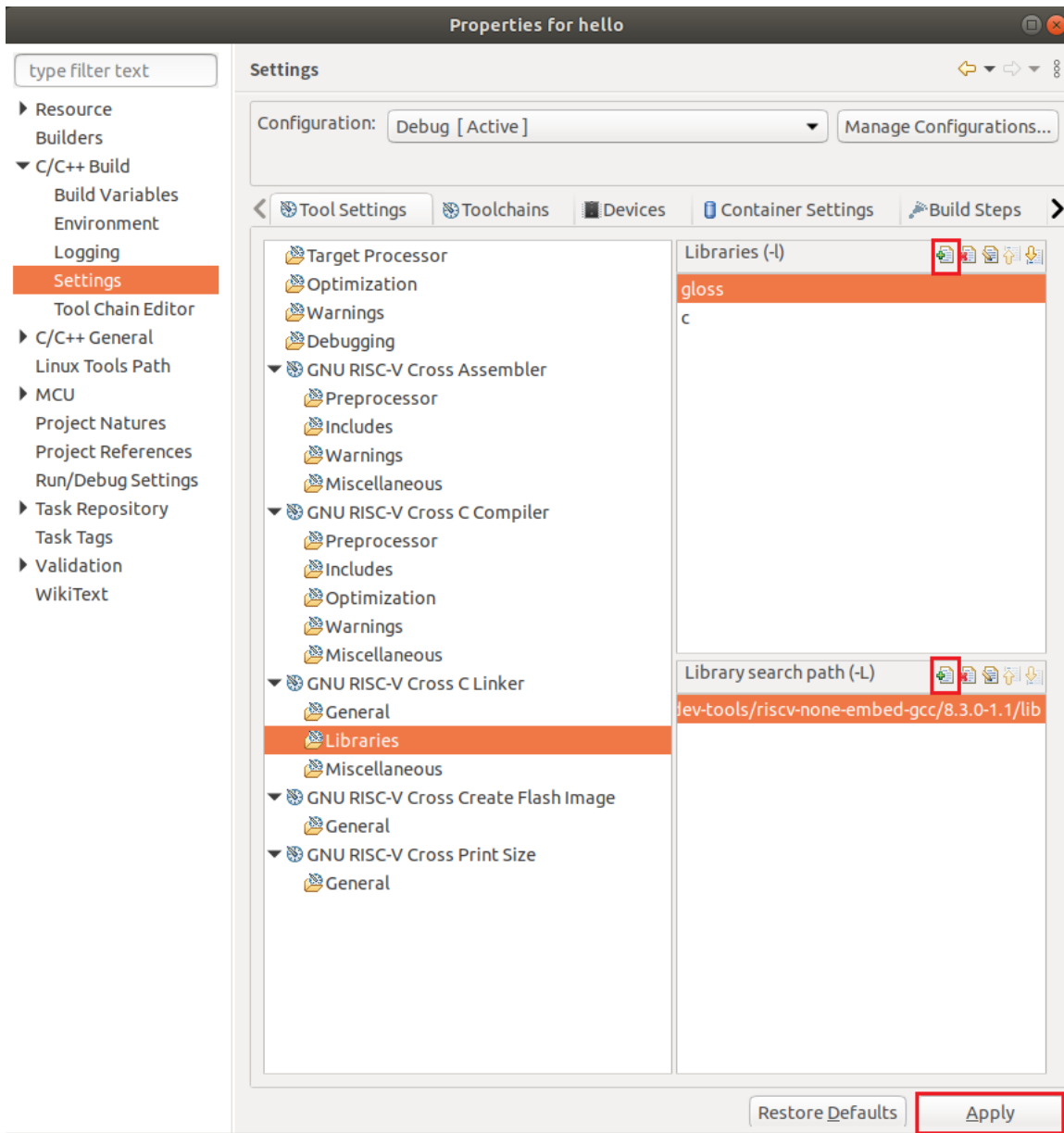
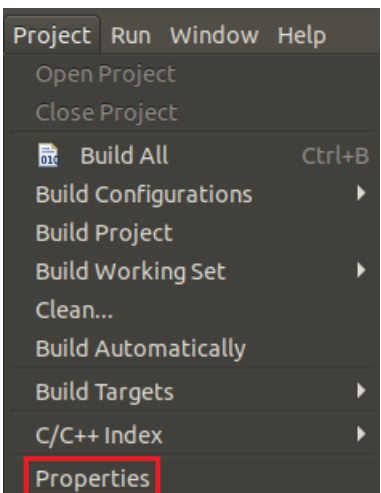


```
CDT Build Console [hello]
21:25:24 **** Build of configuration Debug for project hello ****
make all
Building file: ../src/main.c
Invoking: GNU RISC-V Cross C Compiler
riscv-none-embed-gcc -msmall-data-limit=8 -mno-save-restore -O0 -fmessage-length=0 -fsigned-char -ffunction-sections -fdata-sections -g3 -std=gnu11 -MMD -MP -MF"src/main.d" -MT"src/main.o" -c -o "src/main.o" "../src/main.c"
Finished building: ../src/main.c

Building target: hello.elf
Invoking: GNU RISC-V Cross C Linker
riscv-none-embed-gcc -msmall-data-limit=8 -mno-save-restore -O0 -fmessage-length=0 -fsigned-char -ffunction-sections -fdata-sections -g3 -Xlinker --gc-sections -Wl,-Map,"hello.map" -o "hello.elf" ./src/main.o
/home/zah/xpack/xPacks/riscv-none-embed-gcc/8.3.0-1.1/bin/./lib/gcc/riscv-none-embed/8.3.0/./../../../../riscv-none-embed/bin/ld: /home/zah/xpack/xPacks/riscv-none-embed-gcc/8.3.0-1.1/bin/./lib/gcc/riscv-none-embed/8.3.0/./../../../../riscv-none-embed/lib/rv32imac/ilp32/libg.a(lib_a-exit.o): in function `__exit':
exit.c:(.text.exit+0x1e): undefined reference to `exit'
/home/zah/xpack/xPacks/riscv-none-embed-gcc/8.3.0-1.1/bin/./lib/gcc/riscv-none-embed/8.3.0/./../../../../riscv-none-embed/bin/ld: /home/zah/xpack/xPacks/riscv-none-embed-gcc/8.3.0-1.1/bin/./lib/gcc/riscv-none-embed/8.3.0/./../../../../riscv-none-embed/lib/rv32imac/ilp32/libg.a(lib_a-sbrkr.o): in function `__sbrkr':
sbrkr.c:(.text._sbrkr+0xe): undefined reference to `__sbrkr'
```

04 配置项目

配置连接器



需要链接的库:

- libgloss.a 库
- libc.a 库

需添加的 C 库:

- 选择工具链路径下的 lib 目录

谢 谢

欢迎交流合作

2020/04/16