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Note: Attention: Work in progress - page under construction

UHSDR development - toolchain for Debian

Preconditions, Assumptions, Scope

- Using Debian version buster/sid
- Install on Win10 PC with Virtualbox
  - ARM toolchain for Linux
  - GDB
  - Eclipse
  - Check installation with test project

Cloning UHSDR from Github, compiling and running (later)

GNU ARM toolchain for Linux

Note: Important: use ltest version of tool chain from web sites below. DO NOT use the ARM toolchain that comes with your Linux distribution

Note: Important: At the time of writing (Jan 2018) this gcc needs to be used: „gcc-arm-none-eabi-6-2017-q2-update-linux“. The latest q4 version compiles UHSDR but the resulting UHSDR does not run. Under further investigation

See https://gnu-mcu-eclipse.github.io/toolchain/arm/install/ for general explanations

Install Arm toolchain for Linux

- Download the latest Linux install tarball file from ARMDeveloper **(use Version 6-2017-q2-update, released: June 28, 2017)**
- Link to download: https://developer.arm.com/open-source/gnu-toolchain/gnu-rm/downloads
- Assuming downloaded file is in /home/gerd/Downloads, open terminal with user gerd:

```
$ mkdir -p ${HOME}/opt
$ cd ${HOME}/opt
$ tar xjf ~/Downloads/gcc-arm-none-eabi-6-2017-q2-update-linux.tar.bz2
$ chmod -R -w /home/gerd/opt/gcc-arm-none-eabi-6-2017-q2-update/
```

- Test if the compiler is functional; use the actual install path:

```
$ /home/gerd/opt/gcc-arm-none-eabi-6-2017-q2-update//bin/arm-none-eabi-
gcc-6.3.1 --version
```

- Output should be like this:

```
arm-none-eabi-gcc-6.3.1 (GNU Tools for ARM Embedded Processors 6-2017-q2-
update) 6.3.1 20170620 (release) [ARM/embedded-6-branch revision 249437]
Copyright (C) 2016 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
```

The complete toolchain documentation is available in the .../share/doc/pdf/ folder.

GDB - GNU Debugger & OpenOCD

GDB 7.12 distributed with the initial GCC 6.2 (gcc-arm-none-eabi-6_2-2016q4-20161216) has several issues (crashes on macOS and is incompatible with Neon.2). The recommendation is to use the update version gcc-arm-none-eabi-6-2017-q1-update, or later.

Install OpenOCD

- See https://gnu-mcu-eclipse.github.io/openocd/install/
- Download from https://github.com/gnu-mcu-eclipse/openocd/releases
- Latest version is gnu-mcu-eclipse-openocd-0.10.0-5-20171110-1117-debian64.tgz

```
$ sudo mkdir -p /opt/gnuarmeclipse
$ cd /opt/gnuarmeclipse
$ tar xvf /home/gerd/Downloads/gnu-mcu-eclipse-
openocd-0.10.0-5-20171110-1117-debian64.tgz
```

- Test installation:

```
$ /opt/gnuarmeclipse/gnu-mcu-
eclipse/openocd/0.10.0-5-20171110-1117/bin/openocd --version
```

- Output should be like this:

```
GNU MCU Eclipse 64-bits Open On-Chip Debugger 0.10.0+dev-00254-g2ec04e4e
(2017-11-10-11:27)
Licensed under GNU GPL v2
For bug reports, read
http://openocd.org/doc/doxygen/bugs.html
```

GNU MCU Eclipse and CDT

- Install Eclipse and CDT

- Download GNU MCU Eclipse IDE for C/C++ Developers from GitHub Releases
- Releases are archived here: See https://github.com/gnu-mcu-eclipse/org.eclipse.epp.packages/releases/
- Download latest release. At time of writing this is https://github.com/gnu-mcu-eclipse/org.eclipse.epp.packages/releases/download/v4.3.2-20180125-o2/20180125-1917-gnumcueclipse-4.3.2-oxygen-2-linux.gtk.x86_64.tar.gz
- Release Notes for latest release here: https://gnu-mcu-eclipse.github.io/blog/2018/01/25/plugins-v4.3.2-201801250917-released/

```
$ cd /home/gerd/opt/
$ mkdir GnuMcuEclipse
$ cd GnuMcuEclipse/
$ tar xvf /home/gerd/Downloads/20180125-1917-gnumcueclipse-4.3.2-oxygen-2-linux.gtk.x86_64.tar.gz
```

Launch Eclipse to test installation

- Launch eclipse to test installation

```
/home/gerd/opt/GnuMcuEclipse/eclipse/eclipse
```

(grg seems not necessary, check installed plugins. first try if those compile run debug)

Install GNU MCU Eclipse plug-ins

- See https://gnu-mcu-eclipse.github.io/plugins/install/
- In Eclipse: Help→Install new software, choose „work with GNU MCU Eclipse Plug-ins - http://gnu-mcu-eclipse.netlify.com/v4-neon-updates“. Then select these packages:
  - GNU MCU C/C++ ARM Cross Compiler
  - GNU MCU C/C++ Documentation (Placeholder)
  - GNU MCU C/C++ OpenOCD Debugging
  - (GNU MCU C/C++ QEMU) ??
  - GNU MCU C/C++ STM32Fx Project Templates

(/grg)

Build Test Project to check all is ok

- Build a test project to see if all ok https://gnu-mcu-eclipse.github.io/tutorials/blinky-arm/

Next step: import UHSDR into gnu arm eclipse

UHSDR development - import UHSDR into gnu arm eclipse