

U-boot

U-boot must be cross-compiled on an x86 Linux PC.

Essential packages

You have to install some essential packages to build our u-boot.

Enter the following command.

Some packages listed in the below might not be essential but it is worth to install since these are also used when you build a kernel.

```
$ sudo apt install git lzop build-essential gcc bc libncurses5-dev libc6-i386 lib32stdc++6 zlib1g:i386
```

Toolchain

Click one of the site to download toolchain to build U-boot.

- [Linaro GCC aarch64-none-elf 4.8 2013.11](#)
- [Linaro GCC arm-none-eabi 4.8-2014.04](#)

Once the download is done, extract the tarball to **/opt/toolchains/**.

```
$ sudo mkdir -p /opt/toolchains
$ sudo tar xvf gcc-linaro-aarch64-none-elf-4.8-2013.11_linux.tar.xz -C /opt/toolchains/
$ sudo tar xvf gcc-linaro-arm-none-eabi-4.8-2014.04_linux.tar.xz -C /opt/toolchains/
```

In order to add the toolchain path to PATH, paste below lines to **\$HOME/.bashrc**.

```
export ARCH=arm64
export CROSS_COMPILE=aarch64-none-elf-
export PATH=/opt/toolchains/gcc-linaro-aarch64-none-elf-4.8-2013.11_linux/bin:/opt/toolchains/gcc-linaro-arm-none-eabi-4.8-2014.04_linux/bin:$PATH
```

You can apply the change if you login again or import to apply this change, login again or evaluate **\$HOME/.bashrc** with source command.

```
$ source ~/.bashrc
```

You can check if the toolchain installed above works properly while checking the version of toolchain.

If you can find **gcc version 4.8.3 20140904 (prerelease)** at the end of the line, the toolchain is well installed.

```
$ aarch64-none-elf-gcc -v
Using built-in specs.
COLLECT_GCC=aarch64-none-elf-gcc
COLLECT_LTO_WRAPPER=/opt/toolchains/gcc-linaro-aarch64-none-elf-4.8-2013.11_linux/bin/./libexec/gcc/aarch64-none-elf/4.8.3/lto-wrapper
Target: aarch64-none-elf
Configured with: /cbuild/slaves/oorts/crosstool-ng/builds/aarch64-none-elf-linux/.build/src/gcc-linaro-4.8-2013.11/configure --build=i686-build_pc-linux-gnu --host=i686-build_pc-linux-gnu --target=aarch64-none-elf --prefix=/cbuild/slaves/oorts/crosstool-ng/builds/aarch64-none-elf-linux/install --with-local-prefix=/cbuild/slaves/oorts/crosstool-ng/builds/aarch64-none-elf-linux/install/aarch64-none-elf --without-headers --with-newlib --enable-threads=no --disable-shared --with-pkgversion='crosstool-NG linaro-1.13.1-4.8-2013.11 - Linaro GCC 2013.10' --with-bugurl=https://bugs.launchpad.net/gcc-linaro --with-arch=armv8-a --disable-__cxa_atexit --with-gmp=/cbuild/slaves/oorts/crosstool-ng/builds/aarch64-none-elf-linux/.build/aarch64-none-elf/build/static --with-mpfr=/cbuild/slaves/oorts/crosstool-ng/builds/aarch64-none-elf-linux/.build/aarch64-none-elf/build/static --with-mpc=/cbuild/slaves/oorts/crosstool-ng/builds/aarch64-none-elf-linux/.build/aarch64-none-elf/build/static --with-isl=/cbuild/slaves/oorts/crosstool-ng/builds/aarch64-none-elf-linux/.build/aarch64-none-elf/build/static --with-cloog=/cbuild/slaves/oorts/crosstool-ng/builds/aarch64-none-elf-linux/.build/aarch64-none-elf/build/static --with-libelf=/cbuild/slaves/oorts/crosstool-ng/builds/aarch64-none-elf-linux/.build/aarch64-none-elf/build/static --enable-lto --enable-linker-build-id --disable-libmudflap --disable-libgomp --disable-libssp --disable-libstdcxx-pch --enable-multiarch --disable-multilib --enable-languages=c,c++,fortran
Thread model: single
gcc version 4.8.3 20131111 (prerelease) (crosstool-NG linaro-1.13.1-4.8-2013.11 - Linaro GCC 2013.10)
```

```
$ ./arm-none-eabi-gcc -v
Using built-in specs.
COLLECT_GCC=./arm-none-eabi-gcc
COLLECT_LTO_WRAPPER=/opt/toolchains/gcc-linaro-arm-none-eabi-4.8-2014.04_linux/bin/./libexec/gcc/arm-none-eabi/4.8.3/lto-wrapper
Target: arm-none-eabi
Configured with: /cbuild/slaves/oorts/crosstool-ng/builds/arm-none-eabi-linux/.build/src/gcc-linaro-4.8-2014.04/configure --build=i686-build_pc-linux-gnu --host=i686-build_pc-linux-gnu --target=arm-none-eabi --prefix=/cbuild/slaves/oorts/crosstool-ng/builds/arm-none-eabi-linux/install --with-local-prefix=/cbuild/slaves/oorts/crosstool-ng/builds/arm-none-eabi-linux/install/arm-none-eabi --without-headers --with-newlib --enable-threads=no --disable-shared --with-pkgversion='crosstool-NG linaro-1.13.1-4.8-2014.04 - Linaro GCC 4.8-2014.04' --with-
```

```
bugurl=https://bugs.launchpad.net/gcc-linaro --disable-__cxa_atexit --with-gmp=/cbuild/slaves/oorts/crosstool-ng/builds/arm-none-eabi-linux/.build/arm-none-eabi/build/static --with-mpfr=/cbuild/slaves/oorts/crosstool-ng/builds/arm-none-eabi-linux/.build/arm-none-eabi/build/static --with-mpc=/cbuild/slaves/oorts/crosstool-ng/builds/arm-none-eabi-linux/.build/arm-none-eabi/build/static --with-isl=/cbuild/slaves/oorts/crosstool-ng/builds/arm-none-eabi-linux/.build/arm-none-eabi/build/static --with-cloog=/cbuild/slaves/oorts/crosstool-ng/builds/arm-none-eabi-linux/.build/arm-none-eabi/build/static --with-libelf=/cbuild/slaves/oorts/crosstool-ng/builds/arm-none-eabi-linux/.build/arm-none-eabi/build/static --enable-lto --enable-linker-build-id --enable-libmudflap --disable-libgomp --enable-libssp --disable-libstdcxx-pch --enable-multilib --enable-languages=c,c++,fortran --with-multilib-list=aprofile
Thread model: single
gcc version 4.8.3 20140401 (prerelease) (crosstool-NG
linaro-1.13.1-4.8-2014.04 - Linaro GCC 4.8-2014.04)
```

Checkout & compile

You can checkout **U-boot** source tree from [Hardkernel's Github](#).

```
$ git clone https://github.com/hardkernel/u-boot.git -b odroidg12-v2015.01
```

Before you compile **U-boot**, you must configure for **ODROID-HC4** with following command.

```
$ cd u-boot
$ make odroidc4_defconfig
```

And finally you can compile **U-boot**.

```
$ make
```

Installation

Installation to memory card directly

We provide the script, **sd_fuse/sd_fusing.sh**, this helps you to install the bootloader into your blank card MicroSD.

1. Insert your card to USB card reader and attach to USB host port of your desktop.
2. Check the device path of your USB card reader.
3. Install the bootloader binaries using **sd_fuse/sd_fusing.sh**.

```
$ cd sd_fuse
$ ./sd_fusing.sh <device/path/of/your/card>
```

From:

<http://wiki.odroid.com/> - **ODROID Wiki**

Permanent link:

http://wiki.odroid.com/odroid-hc4/software/building_u-boot

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