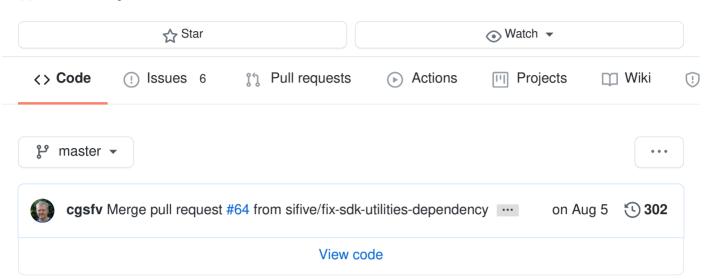
# ☐ sifive / freedom-tools

Tools for SiFive's Freedom Platform





#### **README.md**

# SiFive Freedom RISC-V Tools for Embedded Development

At SiFive we've been distributing binary release packages of the embedded development tools that target our Freedom RISC-V platforms. This repository contains the scripts we use to build these tools.

# Packages and their contents

- RISC-V GNU Newlib Toolchain (riscv64-unknown-elf-\*)
  - Binutils
  - o GCC
  - o GDB
  - Newlib (and nano)
  - Picolibc
  - LibExpat
- RISC-V OpenOCD ( riscv-openocd-\* )
  - o OpenOCD
  - LibUSB, LibUSB-Compat, LibFTDI
- RISC-V QEMU ( riscv-qemu-\* )
  - QEMU (riscv32-softmmu + riscv64-softmmu)

- o ZLib, LibFFI, LibIConv, GetText, GLib, LibPNG, JPEG, PixMan
- SDK Utilities (sdk-utilities-\*)
  - DTC (Device Tree Compiler)
  - Freedom Elf2Hex
  - Spike DASM (Disassembler)
- Trace Decoder (trace-decoder-\*)
  - Trace Decoder
  - o SWIG, Binutils (bfd, opcodes, liberty, ZLib
- XC3SPROG (xc3sprog-\*)
  - XC3SPROG
  - o LibUSB, LibUSB-Compat, LibFTDI, LibIConv

All the packages has a uniquely named root folder, making it easy to untar/unzip'ing multiple versions next to each other.

## To build the tools:

```
$ git clone git@github.com:sifive/freedom-tools.git
$ cd freedom-tools
$ git submodule update --init --recursive
$ make
```

The final output is a set of tarballs in the "bin" folder that should be ready to use. The output of a Ubuntu build includes a set of tarballs and zip files for Windows which is build using the MinGW toolchain.

# **Prerequisites**

Several standard packages are needed to build the tools on the different supported platforms.

On Ubuntu, executing the following command should suffice:

```
$ sudo apt-get install cmake autoconf automake autotools-dev curl libmpc-dev libmpfr-dev libgmp-dev gawk build-essential bison flex texinfo gperf patchutils bc zlib1g-dev libexpat-dev libtool pkg-config mingw-w64 mingw-w64-tools texlive zip python-dev gettext libglib2.0-dev libpixman-1-dev swig ninja-build python3
$ sudo pip3 install meson
```

On OS X, you can use Homebrew to install most of the dependencies and then you also need MacTex:

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```
$ brew install cmake autoconf automake gawk gnu-sed gnu-tar texinfo libtool pkg-config wget xz swig python3 ninja meson
```

On Fedora/CentOS/RHEL OS, executing the following command should suffice - plus see below:

```
$ sudo yum install cmake libmpc-devel mpfr-devel gmp-devel gawk bison
flex texinfo patchutils gcc gcc-c++ zlib-devel expat-devel swig rh-
python35 ninja-build
$ sudo pip3 install meson
```

On CentOS/RHEL 7 and Fedora you can use yum install for the rest:

```
$ sudo yum install autoconf automake libtool pkg-config
```

On CentOS/RHEL 6 you need to download and compile some tools manually to get the correct versions:

```
$ wget http://ftp.gnu.org/gnu/autoconf/autoconf-2.69.tar.gz
$ tar xzvf autoconf-2.69.tar
$ cd autoconf-2.69
$ ./configure
$ make
$ make install
$ wget http://ftp.gnu.org/gnu/automake/automake-1.15.tar.gz
$ tar xzvf automake-1.15.tar.gz
$ cd automake-1.15
$ ./configure
$ make
$ make install
$ wget http://ftp.gnu.org/gnu/libtool/libtool-2.4.6.tar.gz
$ tar xzvf libtool-2.4.6.tar.gz
$ cd libtool-2.4.6
$ ./configure
$ make
$ make install
$ wget https://pkgconfig.freedesktop.org/releases/pkg-config-
0.29.2.tar.gz
$ tar xzvf pkg-config-0.29.2.tar.gz
$ cd pkg-config-0.29.2
$ ./configure --with-internal-glib
$ make
```

- \$ make install
- \$ wget https://ftp.gnu.org/gnu/texinfo/texinfo-6.4.tar.gz
- \$ tar xzvf texinfo-6.4.tar.gz
- \$ cd texinfo-6.4
- \$ ./configure
- \$ make
- \$ make install

### Releases 6

April 2020 Tools Release - Toolchain Only (Latest) on Jul 15

+ 5 releases

## **Packages**

No packages published

### **Contributors** 8

















# Languages

Makefile 69.1% • C 28.1% • Shell 1.2% • Other 1.6%

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