





 **sifive** / **freedom-tools**

Tools for SiFive's Freedom Platform

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on Aug 5

 302[View code](#)**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
 - GCC
 - GDB
 - Newlib (and nano)
 - Picolibc
 - LibExpat
- RISC-V OpenOCD (`riscv-openocd-*`)
 - OpenOCD
 - LibUSB, LibUSB-Compat, LibFTDI
- RISC-V QEMU (`riscv-qemu-*`)
 - QEMU (riscv32-sofmmmu + riscv64-sofmmmu)

- 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
 - SWIG, Binutils (bfd, opcodes, liberty, ZLib
- XC3SPROG (`xc3sprog-*`)
 - XC3SPROG
 - 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](#):

```
$ 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%