

Get the sources

You will need gnu binutils, gcc and gdb. They are available on <ftp.gnu.org> or any gnu mirror.

<http://ftp.gnu.org/gnu/binutils>, <http://ftp.gnu.org/gnu/gcc>, <http://ftp.gnu.org/gnu/gdb> Let's unpack sources:

```
$ mkdir src
$ cd src
$ tar xjf ../binutils-2.xx.tar.bz2
$ tar xjf ../gcc-x.x.x.tar.bz2
$ tar xjf ../gdb-x.x.x.tar.bz2
$
```

Compilation

Now lets compile. I assume we'll need to compile more toolchains later, so let's share the sources and compile in a separate directory:

```
$ cd ..
$ mkdir build build/mipsel build/mipsel/binutils build/mipsel/gcc
```

First, binutils

```
$ cd build/mipsel/binutils
$ ../../../../src/binutils-2.x/configure --prefix=/where/to/put/it --target=mipsel-unknown-elf \
  --program-prefix=mipsel-unknown-elf- --disable-nls
$ make
$ make install
$ make -C bfd install_libbfd
$ make -C libiberty install_to_libdir
$
```

Export the bin directory of your installation path, if not already in it. You should make this permanent by setting the PATH variable in a shell's startup script.

```
$ export PATH=$PATH:/where/to/put/it/bin
$
```

Now gcc

```
$ cd ../gcc
$ ../../../../src/gcc-x.x.x/configure --program-prefix=mipsel-unknown-elf- --prefix=/where/to/put/it/
  --enable-languages=c --target=mipsel-unknown-elf --disable-nls --disable-werror --disable-libs
  --disable-threads --without-headers
$ make
$ make install
$
```

Now gdb

```
$ cd ../gdb
$ ../../../../src/gdb-x.x.x/configure --program-prefix=mipsel-unknown-elf- --prefix=/where/to/put/it/
  --target=mipsel-unknown-elf
$ make
$ make install
$
```

We're done !

You may compile PowerPC toolchain as well, with the same lines, replacing `mipsel` by `powerpc`.