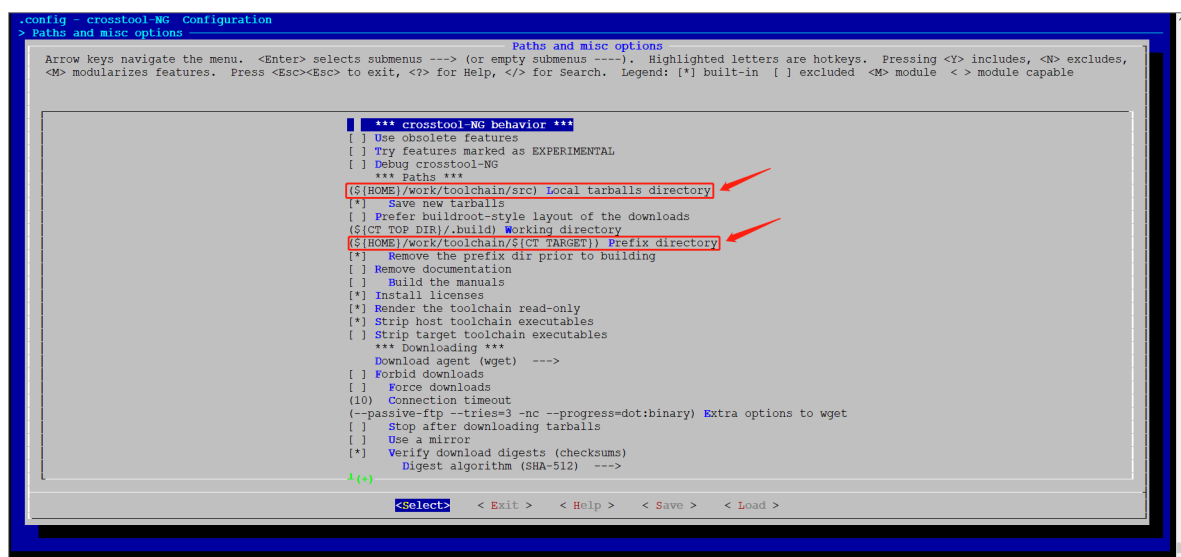# Install crosstool-ng(1.24)

```
1  $ git clone https://github.com/crosstool-ng/crosstool-ng
2  $ cd crosstool-ng
   $  sudo apt install -y gperf bison flex texinfo help2man gawk
libtool libncurses5-dev libtool.bin
3  $ ./configure
4  $ make
5  $ sudo make install # maybe need sudo
6
7  # check whether install success
8  $ ct-ng -v
9  GNU Make 4.1
10 Built for x86_64-pc-linux-gnu
11 Copyright (C) 1988-2014 Free Software Foundation, Inc.
12 License GPLv3+: GNU GPL version 3 or later
   <http://gnu.org/licenses/gpl.html>
13 This is free software: you are free to change and redistribute it.
14 There is NO WARRANTY, to the extent permitted by law.
15
16 $ ct-ng list-samples
```
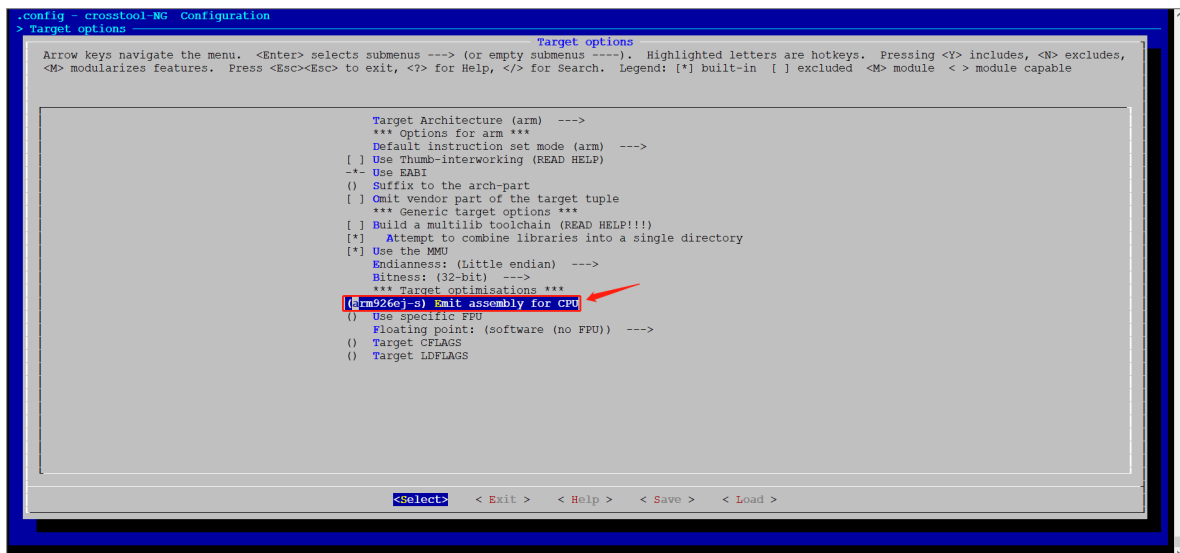
Build Configure

```
1  $ mkdir armv5te-arm926ejs-build
2  $ ct-ng arm-unknown-linux-gnueabi
3  $ ct-ng menuconfig
```
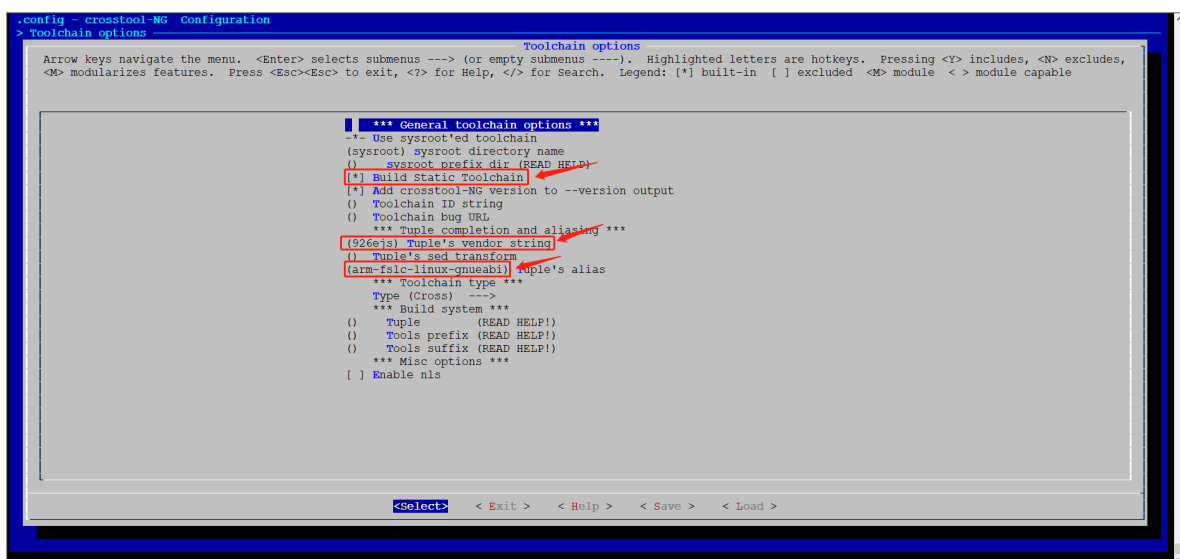
Paths and misc options

Target options

Toolchain options

Config Patch

```
1  --- arm-unknown-linux-gnueabi.config    2020-07-03 15:18:34.168786597
   +0800
2  +++ .config 2020-07-03 15:22:54.876696100 +0800
3  @@ -44,13 +44,13 @@
4   #
5   # Paths
6   #
7  -CT_LOCAL_TARBALLS_DIR="${HOME}/src"
8  +CT_LOCAL_TARBALLS_DIR="${HOME}/work/toolchain/src"
9   CT_SAVE_TARBALLS=y
10  # CT_TARBALLS_BUILDROOT_LAYOUT is not set
11  CT_WORK_DIR="${CT_TOP_DIR}/.build"
12
   CT_BUILD_TOP_DIR="${CT_WORK_DIR:-${CT_TOP_DIR}/.build}/${CT_HOST:+HOST-${C
   T_HOST}/}${CT_TARGET}"
13  CT_BUILD_DIR="${CT_BUILD_TOP_DIR}/build"
```

```
14  -CT_PREFIX_DIR="${CT_PREFIX:-${HOME}/x-
    tools}/${CT_HOST:+HOST-${CT_HOST}/}${CT_TARGET}"
15  +CT_PREFIX_DIR="${HOME}/work/toolchain/${CT_TARGET}"
16   CT_RM_RF_PREFIX_DIR=y
17   # CT_REMOVE_DOCS is not set
18   # CT_BUILD_MANUALS is not set
19  @@ -138,8 +138,7 @@
20   # CT_ARCH_XTENSA is not set
21   CT_ARCH="arm"
22   CT_ARCH_CHOICE_KSYM="ARM"
23  -CT_ARCH_CPU=""
24  -CT_ARCH_TUNE=""
25  +CT_ARCH_CPU="arm926ej-s"
26   CT_ARCH_ARM_SHOW=y
27
28   #
29  @@ -187,7 +186,6 @@
30   CT_ARCH_SUPPORTS_WITH_FPU=y
31   CT_ARCH_SUPPORTS_SOFTFP=y
32   CT_ARCH_EXCLUSIVE_WITH_CPU=y
33  -CT_ARCH_ARCH=""
34   CT_ARCH_FPU=""
35   # CT_ARCH_FLOAT_AUTO is not set
36   # CT_ARCH_FLOAT_HW is not set
37  @@ -210,7 +208,7 @@
38   CT_SYSROOT_DIR_PREFIX=""
39   CT_WANTS_STATIC_LINK=y
40   CT_WANTS_STATIC_LINK_CXX=y
41  -# CT_STATIC_TOOLCHAIN is not set
42  +CT_STATIC_TOOLCHAIN=y
43   CT_SHOW_CT_VERSION=y
44   CT_TOOLCHAIN_PKGVERSION=""
45   CT_TOOLCHAIN_BUGURL=""
46  @@ -218,9 +216,9 @@
47   #
48   # Tuple completion and aliasing
49   #
50  -CT_TARGET_VENDOR="unknown"
51  +CT_TARGET_VENDOR="926ejs"
52   CT_TARGET_ALIAS_SED_EXPR=""
53  -CT_TARGET_ALIAS=""
54  +CT_TARGET_ALIAS="arm-fslc-linux-gnueabi"
55
56   #
57   # Toolchain type
58  @@ -364,17 +362,10 @@
59   CT_BINUTILS_HAS_PLUGINS=y
60   CT_BINUTILS_HAS_PKGVERSION_BUGURL=y
61   CT_BINUTILS_GOLD_SUPPORTS_ARCH=y
62  -CT_BINUTILS_GOLD_SUPPORT=y
63   CT_BINUTILS_FORCE_LD_BFD_DEFAULT=y
64  -# CT_BINUTILS_LINKER_LD is not set
65  -CT_BINUTILS_LINKER_LD_GOLD=y
66  -CT_BINUTILS_GOLD_INSTALLED=y
67  -CT_BINUTILS_GOLD_THREADS=y
68  -CT_BINUTILS_LINKER_BOTH=y
69  -CT_BINUTILS_LINKERS_LIST="ld,gold"
70  -CT_BINUTILS_LD_WRAPPER=y
```

```
 71   +CT_BINUTILS_LINKER_LD=y
 72   +CT_BINUTILS_LINKERS_LIST="ld"
 73    CT_BINUTILS_LINKER_DEFAULT="bfd"
 74   -CT_BINUTILS_PLUGINS=y
 75    CT_BINUTILS_RELRO=m
 76    CT_BINUTILS_DETERMINISTIC_ARCHIVES=y
 77    CT_BINUTILS_EXTRA_CONFIG_ARRAY=""
 78   @@ -533,8 +524,6 @@
 79    CT_GCC_REQUIRE_4_9_or_later=y
 80    CT_GCC_later_than_4_8=y
 81    CT_GCC_4_8_or_later=y
 82   -CT_CC_GCC_ENABLE_PLUGINS=y
 83   -CT_CC_GCC_GOLD=y
 84    CT_CC_GCC_HAS_LIBMPX=y
 85    CT_CC_GCC_ENABLE_CXX_FLAGS=""
 86    CT_CC_GCC_CORE_EXTRA_CONFIG_ARRAY=""
 87   @@ -547,7 +536,6 @@
 88    # Optimisation features
 89    #
 90    CT_CC_GCC_USE_GRAPHITE=y
 91   -CT_CC_GCC_USE_LTO=y
 92
 93    #
 94    # Settings for libraries running on target
 95   @@ -636,9 +624,8 @@
 96    CT_GDB_later_than_7_0=y
 97    CT_GDB_7_0_or_later=y
 98    CT_GDB_CROSS=y
 99   -# CT_GDB_CROSS_STATIC is not set
100   +CT_GDB_CROSS_STATIC=y
101    # CT_GDB_CROSS_SIM is not set
102   -# CT_GDB_CROSS_PYTHON is not set
103    CT_GDB_CROSS_EXTRA_CONFIG_ARRAY=""
104    CT_GDB_NATIVE=y
105    CT_GDB_GDBSERVER=y
      #peter
      CT_ISL_V_0_18=y
```

Build Toolchain

```
1   ct-ng build
```

Test Toolchain

```
1  $ ./arm-926ejs-linux-gnueabi/bin/arm-926ejs-linux-gnueabi-gcc -v
2
3  Using built-in specs.
4  COLLECT_GCC=./arm-926ejs-linux-gnueabi/bin/arm-926ejs-linux-gnueabi-gcc
5  COLLECT_LTO_WRAPPER=/home/xxxxxx/work/toolchain/arm-926ejs-linux-
   gnueabi/libexec/gcc/arm-926ejs-linux-gnueabi/9.2.0/lto-wrapper
6  Target: arm-926ejs-linux-gnueabi
7  Configured with: /home/xxxxxx/work/toolchain/arm-unknown-linux-
   gnueabi/.build/arm-926ejs-linux-gnueabi/src/gcc/configure --build=x86_64-
   build_pc-linux-gnu --host=x86_64-build_pc-linux-gnu --target=arm-926ejs-
   linux-gnueabi --prefix=/home/xxxxxx/work/toolchain/arm-926ejs-linux-gnueabi -
   -with-sysroot=/home/xxxxxx/work/toolchain/arm-926ejs-linux-gnueabi/arm-
   926ejs-linux-gnueabi/sysroot --enable-languages=c,c++ --with-cpu=arm926ej-s -
   -with-float=soft --with-pkgversion='crosstool-NG 1.24.0.105_5659366' --
   disable-sjlj-exceptions --enable-__cxa_atexit --disable-libmudflap --disable-
   libgomp --disable-libssp --disable-libquadmath --disable-libquadmath-support
   --disable-libsanitizer --disable-libmpx --with-
   gmp=/home/xxxxxx/work/toolchain/arm-unknown-linux-gnueabi/.build/arm-926ejs-
   linux-gnueabi/buildtools --with-mpfr=/home/xxxxxx/work/toolchain/arm-unknown-
   linux-gnueabi/.build/arm-926ejs-linux-gnueabi/buildtools --with-
   mpc=/home/xxxxxx/work/toolchain/arm-unknown-linux-gnueabi/.build/arm-926ejs-
   linux-gnueabi/buildtools --with-isl=/home/xxxxxx/work/toolchain/arm-unknown-
   linux-gnueabi/.build/arm-926ejs-linux-gnueabi/buildtools --disable-lto --
   with-host-libstdcxx='-static-libgcc -Wl,-Bstatic,-lstdc++ -lm' --enable-
   threads=posix --enable-target-optspace --disable-plugin --disable-nls --
   disable-multilib --with-local-prefix=/home/xxxxxx/work/toolchain/arm-926ejs-
   linux-gnueabi/arm-926ejs-linux-gnueabi/sysroot --enable-long-long
8  Thread model: posix
9  gcc version 9.2.0 (crosstool-NG 1.24.0.105_5659366)
```