

# MT7981 SDK Quick Start

Version: 1.0  
Release date: 2022-4-26

## 1 Prebuild Requirement

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1. Use ubuntu 18.04
2. Install below tarball..

#OpenWRT

RUN apt-get install -y uuid-dev

#toolchain

RUN apt-get install -y gcc-aarch64-linux-gnu

RUN apt-get install -y clang-6.0

## 2 Build BL2/FIP image

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### Build Uboot

```
tar -Jxvf uboot-2022.04_0421_formal.tar.xz
cd uboot-mtk-20220412-sb/
```

```
#for spim-nand :
make mt7981_spim_nand_rfb_defconfig
```

```
#for spim-nor
make mt7981_spim_nor_rfb_defconfig
```

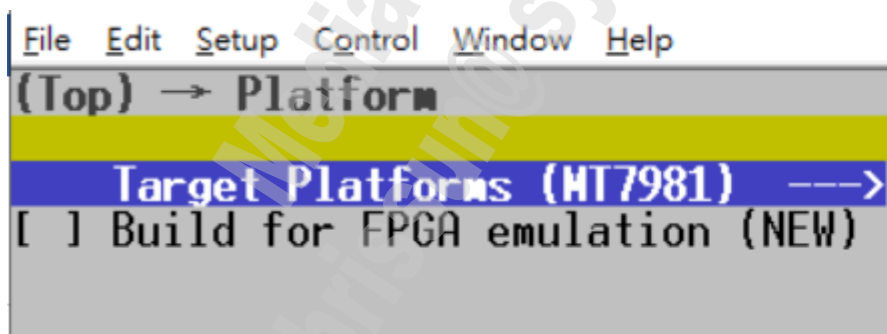
```
make CROSS_COMPILE=/usr/bin/aarch64-linux-gnu-
```

Uboot's output bin for FIP image

➔ ./u-boot.bin

### Build ATF

```
tar -Jxvf atf-2.6-20220421-d0152f6db.tar.xz
cd atf-2.6-20220421-d0152f6db
make menuconfig
select "MT7981" Platform
```



Select "BL2 + FIP image without secure boot" for Target Image

File Edit Setup Control Window Help

(Top) → Target → Target Images

( ) BL2

( ) BL31

(X) BL2 + FIP image without secure boot

Select "spim-nand" or "spim-nor" for your Target flash devices.

(Top) → Target

Target Images (BL2 + FIP image without secure boot)

[ ] Enable Secure Boot (NEW)

Target Flash Devices (spim-snand) --->

[\*] Enable NAND mapping block management (NEW)

(spim:2k+64) nand flash type (NEW)

DRAM options, select "BGA"(for mt7981B) / "DDR3" / "Auto detect"

(Top) → DRAM → BOARD type

( ) QFN

(X) BGA

(Top) → DRAM

DRAM type (DDR3) --->

BOARD type (BGA) --->

DRAM size limitation (Auto detect) --->

Input your u-boot.bin image path (build from uboot-mtk) //把 u-boot.bin 拷到 atf 根目录下

(Top)

Platform --->

Target --->

DRAM --->

Log --->

**(./u-boot.bin) Path to BL33 image (NEW)**

(/usr/bin/aarch64-linux-gnu-) cross compile prefix (NEW)

Save & exit

make

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BL2 image is located in atf-20211202-d53ec3ae1/build/mt7981/release/bl2.img

FIP image is located in atf-20211202-d53ec3ae1/build/mt7981/release/fip.bin

### 3 Build OpenWRT

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1. Get Openwrt 21.02 source code from Git server

CMD:~/#> git clone --branch openwrt-21.02 <https://git.openwrt.org/openwrt/openwrt.git>

2. Untar WiFi driver, and import WiFi packages into SDK

2.1. CMD:~/#> tar -Jxvf mtk-wifi-mt7981-20220426.tar.xz

2.2. CMD:~/#> cp -rf mtk-wifi-mt7981/\* openwrt/

3. Change to openwrt folder

CMD:~/#> cd openwrt/

4. Add MTK feed

CMD:~/openwrt#> echo "src-git  
mtk\_openwrt\_feed <https://git01.mediatek.com/openwrt/feeds/mtk-openwrt-feeds>" >>  
feeds.conf.default

5. Run AX3000 auto build script (1<sup>st</sup> time build)

CMD:~/openwrt#> ./autobuild/mt7981-AX3000/lede-branch-build-sanity.sh (for >= 256M  
DRAM )

CMD:~/openwrt#> ./autobuild/mt7981-AX3000-128M/lede-branch-build-sanity.sh (for  
128M DRAM )

Note: you can only run "lede-branch-build-sanity.sh" once, if you want to re-compile, please use "make V=s" instead of running the script again.

### Update image

You can use u-boot command line to upgrade images, include bl2/fip/kernel image,  
In u-boot command line, you can enter "bootmenu" to bring up u-boot menu

```
MT7986> bootmenu
```

```
*** U-Boot Boot Menu ***

1. Startup system (Default)
2. Upgrade firmware
3. Upgrade ATF BL2
4. Upgrade ATF FIP
5. Upgrade single image
6. Load image
0. U-Boot console

Press UP/DOWN to move, ENTER to select, ESC/CTRL+Q to quit
```

You can choose

"2" to upgrade Kernel image

"3" to upgrade BL2 image

"4" to upgrade FIP image,

Below picture shows an example using Uboot menu to upgrade kernel image.

