

BPI-M2 Ultra

How to compiler Uboot 、 Kernel

Version1.0

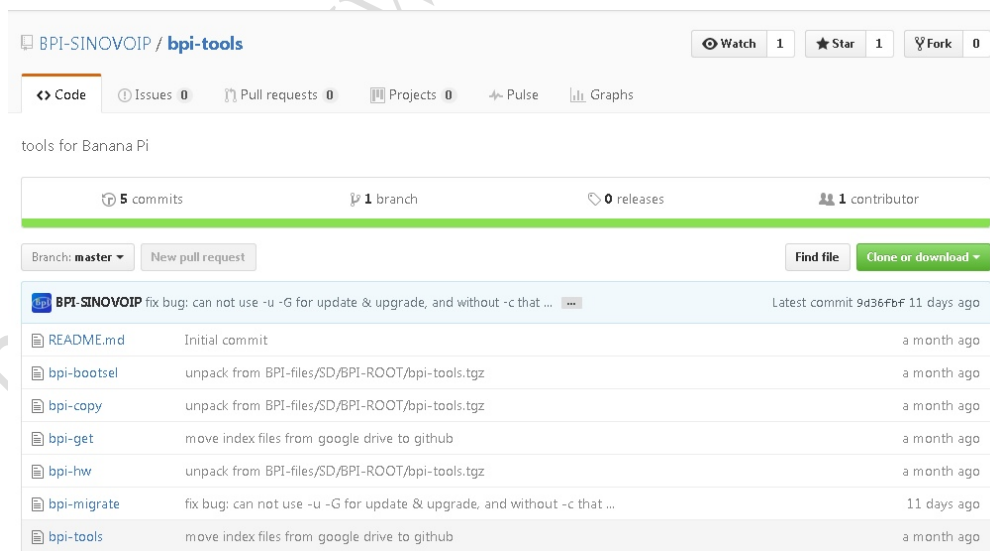
<http://www.banana-pi.org/>

By Justin Chen

1. Click <http://www.banana-pi.org/download.html> download relatively BPI-M2 Ultra Image ; and burn images to SD card.
2. Install tool-chain

```
sudo apt-get install build-essential libncurses5-dev u-boot-tools
qemu-user-static debootstrap git binfmt-support libusb-1.0-0-dev
pkg-config gcc-arm-linux-gnueabi g++-arm-linux-gnueabi
gcc-arm-linux-gnueabi g++-arm-linux-gnueabi libssl-dev
```
3. Install BPI-Tools 、 to BPI-GitHub <https://github.com/BPI-SINOVOIP/bpi-tools>

```
git clone https://github.com/BPI-SINOVOIP/BPI-M2U-bsp.git
```



BPI-SINOVOIP / bpi-tools

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tools for Banana Pi

5 commits 1 branch 0 releases 1 contributor

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File	Commit Message	Time
README.md	Initial commit	a month ago
bpi-bootsel	unpack from BPI-files/SD/BPI-ROOT/bpi-tools.tgz	a month ago
bpi-copy	unpack from BPI-files/SD/BPI-ROOT/bpi-tools.tgz	a month ago
bpi-get	move index files from google drive to github	a month ago
bpi-hw	unpack from BPI-files/SD/BPI-ROOT/bpi-tools.tgz	a month ago
bpi-migrate	fix bug: can not use -u -G for update & upgrade, and without -c that ...	11 days ago
bpi-tools	move index files from google drive to github	a month ago

Put Download done BPI-Tools copy to under /usr/bin

```
sudo cp -a bpi-* /usr/bin/
```

```
justin@justin-OptiPlex-3010:~/BPI_Tools/bpi-tools$ sudo cp -a bpi-* /usr/bin/
```

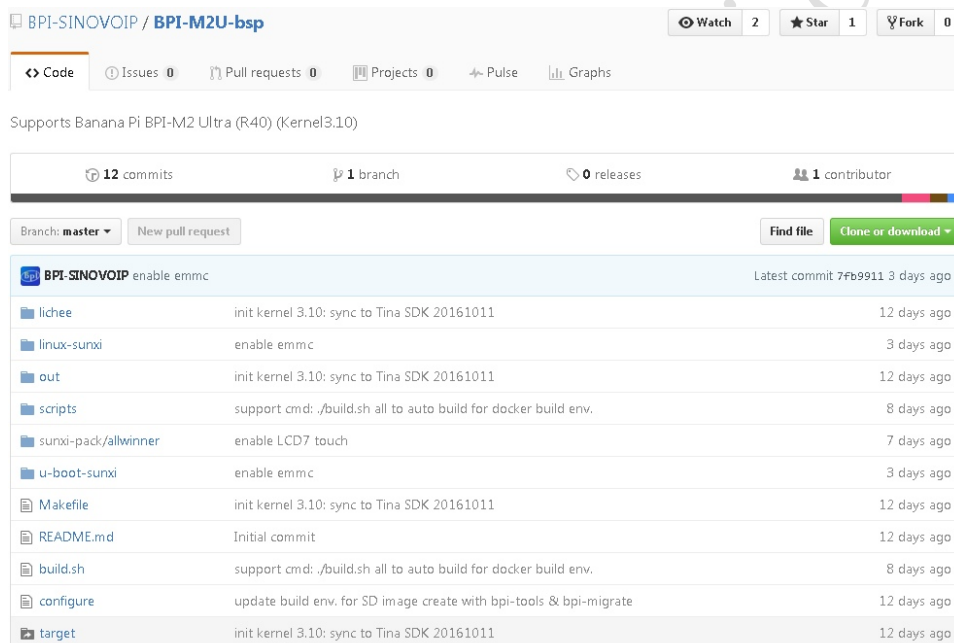
Execute bpi-tools -u order , install successfully after appear belows screen

bpi-tools -u

```
justin@justin-OptiPlex-3010:/$ bpi-tools -u
F UPDATE=yes
BPIFILE=/home/justin/.bpi-tools.lst
Wait for download index file ...
OK!!\n

bpi files:
bpi-tools          v1.2.0(github)
bpi-bootSEL        v1.0.5
bpi-copy           v1.0.10a
bpi-get            v1.0.3(github)
bpi-migrate        v1.3.0(github)
bpi-hw            v1.2.8
```

4. Go to BPI-GitHub <https://github.com/BPI-SINOVOIP/BPI-M2U-bsp>



Grab BPI-M2UUltra-bsp Source Code; execute grabbing source code order

git clone https://github.com/BPI-SINOVOIP/BPI-M2U-bsp.git

```
justin@justin-OptiPlex-3010:/media/DATA_1/Temp_Github/BPI-M2U-bsp$ git clone https://github.com/BPI-SINOVOIP/BPI-M2U-bsp.git
```

switch to BPI-M2U-bsp category after carried out , execute ./build.sh order

```
justin@justin-OptiPlex-3010:/media/DATA_1/Temp_Github/BPI-M2U-bsp/BPI-M2U-bsp$ ./build.sh
```

Can see BPI-M2U configuration, choose BPI-M2U's resolution what you wanted.: default compile 720P :

```

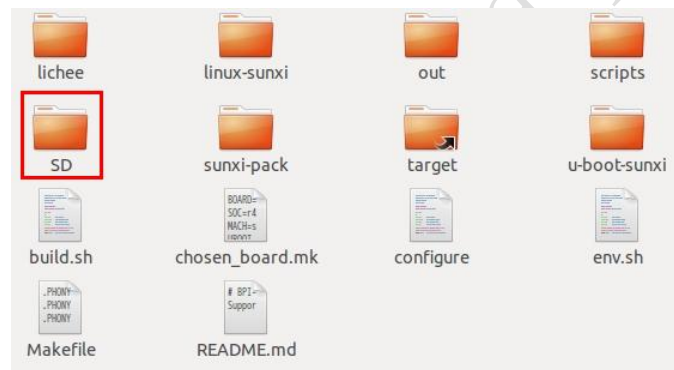
justin@justin-OptiPlex-3010:/media/DATA_1/Temp_Github/BPI-M2U-bsp/BPI-M2U-bsp$ ./build.sh
NOTICE:
new build.sh default select BPI_M2U_720P and pack all boards
supported boards:
BPI_M2U_1080P
BPI_M2U_480P
BPI_M2U_720P
BPI_M2U_LCD7

BPI_M2U_720P configured. Now run `make`
This tool support following building mode(s):
-----
1. Build all, uboot and kernel and pack to download images.
2. Build uboot only.
3. Build kernel only.
4. kernel configure.
5. Pack the builds to target download image, this step must execute after u-boot, kernel and rootfs build out
6. update files for SD
7. Clean all build.
-----
Please choose a mode(1-7): 

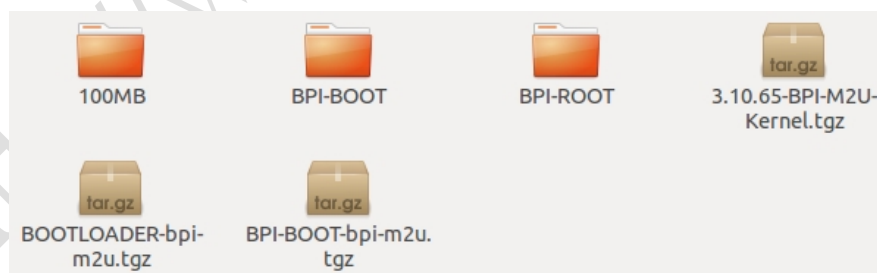
```

Choose mode what you need compile (advise choose 1 option first time compile)

5. Compile done can seen under generate new SD folder BPI-M2U-bsp



Later Enter into SD folder seen below files



These files represent information one by one

100MB → BPI-M2Ultra uboot relative file

BPI-BOOT-bpi-m2u.tgz → BPI-M2Ultra uEnv.txt & uImage relative file

3.10.65-BPI-M2U-Kernel.tgz → BPI-M2Ultra kernel relative file

- Use command to see the SD card current position.

```
sudo fdisk -l
```

```
Disk /dev/sdb: 7969 MB, 7969177600 bytes
246 heads, 62 sectors/track, 1020 cylinders, total 15564800 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x0007ab07

   Device Boot      Start         End      Blocks   Id  System
/dev/sdb1 *        204800       729087       262144    c   W95 FAT32 (LBA)
/dev/sdb2          729088     15269887     7270400    83   Linux
```

This example can be seen SD Card's position in /dev/sdb

Can be seen BPI-M2Ultra system has two partition, one FAT32 partition, another one EXT4 partition, represent gradually.

FAT32 partition (/media/BPI-BOOT)	Mainly for uEnv.txt & uImage
EXT4 partition (/media/BPI-ROOT)	Mainly for RootFS & kernel lib

- Change BPI-M2Ultra Uboot , switch to /SD/100MB category ; execute **bpi-bootset order:**

```
sudo bpi-bootset <file source> <SD route>
```

```
justin@justin-OptiPlex-3010:/media/DATA_1/Temp_Github/BPI-M2U-bsp/BPI-M2U-bsp/SD/100MB$ sudo bpi-bootset BPI_M2U_1080P.img.gz /dev/sdb
```

- Change BPI-M2Ultra uImage , switch to /SD/ category ; carry out relative command.

```
sudo tar -xvf <file source> -C <SD Boot route >
```

```
justin@justin-OptiPlex-3010:/media/DATA_1/Temp_Github/BPI-M2U-bsp/BPI-M2U-bsp/SD$ sudo tar -xvf BPI-B00T-bpi-m2u.tgz -C /media/BPI-B00T
```

Below information after execute , successfully done.

```
justin@justin-OptiPlex-3010:/media/DATA_1/Temp_Github/BPI-M2U-bsp/BPI-M2U-bsp/SD$ sudo tar -xvf BPI-B00T-bpi-m2u.tgz -C /media/BPI-B00T
./
./bananapi/
./bananapi/bpi-m2u/
./bananapi/bpi-m2u/linux/
./bananapi/bpi-m2u/linux/uEnv.txt
./bananapi/bpi-m2u/linux/uImage
```

- Change BPI-M2Ultra Kernel , switch to /SD/ category ; execute relative order

```
sudo tar -xvf <file source> -C <SD Boot route>
```

```
justin@justin-OptiPlex-3010:/media/DATA_1/Temp_Github/BPI-M2U-bsp/BPI-M2U-bsp/SD$ sudo tar -xvf 3.10.65-BPI-M2U-Kernel.tgz -C /media/BPI-ROOT
```

Supplement

1. Change kernel setting , switch to / linux-sunxi category , execute order

```
make ARCH=arm menuconfig
```

```
justin@justin-OptiPlex-3010:/media/DATA_1/Temp_Github/BPI-M2U-bsp/BPI-M2U-bsp/linux-sunxi$ make ARCH=arm menuconfig
```

