



Website: <http://cubieboard.org>

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## Cubietruck android Compile

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## 1. Set up the compilation environment of android

### 1.1 install JDK

```
$wget dl.cubieboard.org/software/tools/android/jdk1.6.0_45.tar.gz
```

**Unpack :**

```
$sudo tar -xvf jdk1.6.0_45.tar.gz
```

```
$ sudo vim ~/.bashrc
```

**add :**

```
JAVA_HOME=/jdk-path/jdk1.6.0_45
```

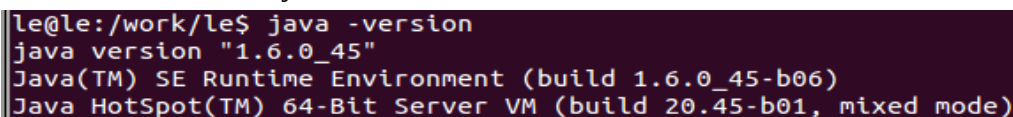
```
export JRE_HOME=/jdk-path/jdk1.6.0_45/jre
```

```
export PATH=$JAVA_HOME/bin:$JRE_HOME/bin:$PATH
```

```
jdk-paththe: path of Download unpacked JDK
```

**Which saved enforced and verify success:**

```
$source ~/.bashrc&&java -version
```



```
le@le:/work/le$ java -version
java version "1.6.0_45"
Java(TM) SE Runtime Environment (build 1.6.0_45-b06)
Java HotSpot(TM) 64-Bit Server VM (build 20.45-b01, mixed mode)
```

Pictured above prove successful

### 1.2 Compile the required package of installation (Ubuntu 12.04) :

```
$sudo apt-get update
```

```
$sudo apt-get upgrade
```

```
$sudo apt-get install build-essential u-boot-tools uboot-mkimage binutils-arm-linux-gnueabi
```

```
$sudo apt-get install gcc g++ gcc-arm-linux-gnueabi gcc-arm-linux-gnueabi-g++-multilib
```

```
$sudo apt-get install cpp-arm-linux-gnueabi libusb-1.0-0 libusb-1.0-0-dev wget fakeroot
```

```
$sudo apt-get install kernel-package zlib1g-dev libncurses5-dev build-essential
```

```
$sudo apt-get install texinfo texlive ccache zlib1g-dev gawk bison flex gettext uuid-dev
```

```
$sudo apt-get install ia32-libs git gnupg flex bison gperf build-essential zip
```

```
$sudo apt-get install curl libc6-dev x11proto-core-dev libx11-dev:i386 lib32ncurses5-dev
```

```
$sudo apt-get install libreadline6-dev:i386 mingw32 tofrodos python-markdown
```

```
$sudo apt-get install libxml2-utils xsltproc zlib1g-dev:i386 libgl1-mesa-dev
```

## 2. Download the package of android source code

### 1) github

git clone https://bitbucket.org/cubietech/a20-android4.2\_lichee.git

git clone https://bitbucket.org/cubietech/a20-android4.2\_android.git

### 2) To download the source code package in baidu cloud :

<http://dl.cubieboard.org/model/Common/android-source/a20/v2.0/>

## 3. Kernel compilation

It is two directory after extract the source code package, one is the android ,another lichee, kernel compilation run in the lichee. Lichee mainly compile some module of equipment , the drivers, the kernel, and so on, and configuration files. Compiled modules and the kernel will copy when compile the whole android.

### The step of compilation as follows:

Copy the configuration file of kernel

```
le@le:/work/le/a20-android/lichee/linux-3.4$ sudo cp arch/arm/configs/cubieboard_2_config .config
```

Compile the kernel

```
le@le:/work/le/a20-android/lichee$  
le@le:/work/le/a20-android/lichee$  
le@le:/work/le/a20-android/lichee$ ./build.sh -p sun7i_android
```

waitting.....

completed:

```
u-boot  
arm-linux-gnueabi-objcopy -O srec u-boot u-boot.srec  
arm-linux-gnueabi-objcopy --gap-fill=0xff -O binary u-boot u-boot.bin  
make[1]:正在离开目录 `/work/le/a20-android/lichee/u-boot'  
INFO: build u-boot OK.  
INFO: build rootfs ...  
INFO: skip make rootfs for android  
INFO: build rootfs OK.  
INFO: build lichee OK.
```

You can enter the lichee/out after Compile and can see the product of the compilation.

```
le@le: /work/le/a20-android/lichee
le@le: /work/le/a20-android/lichee$ ls out/android/common/
bImage      buildroot/  lib/        u-boot.bin  uImage      zImage
le@le: /work/le/a20-android/lichee$ ls out/android/common/
bImage buildroot lib u-boot.bin uImage zImage
le@le: /work/le/a20-android/lichee$
```

## 4.The overall compilation

After the kernel compiled, into the android directory. Here to perform the firmware compile, generating system. Img, userdata. Img image, finally they are packaged to firmware as we need.

Steps are as follows:

```
le@le:/work/le/a20-android$ cd android
```

```
le@le:/work/le/a20-android/android$ source build/envsetup.sh
```

```
le@le:/work/le/a20-android/android$ lunch
```

```
le@le: /work/le/a20-android/android
Lunch menu... pick a combo:
 1. full-eng
 2. full_x86-eng
 3. vbox_x86-eng
 4. full_mips-eng
 5. full_grouper-userdebug
 6. full_tilapia-userdebug
 7. mini_armv7a_neon-userdebug
 8. mini_armv7a-userdebug
 9. mini_mips-userdebug
10. mini_x86-userdebug
11. full_maguro-userdebug
12. full_manta-userdebug
13. full_toroplus-userdebug
14. full_toro-userdebug
15. sugar_cubieboard2-eng
16. sugar_cubietruck-eng
17. sugar_evb-eng
18. sugar_ref001-eng
19. sugar_standard-eng
20. wing_evb_v10-eng
21. full_panda-userdebug

Which would you like? [full-eng]
```

input 16(choose sugar\_cubietruck-eng)



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### Copy the kernel and modules:

```
le@le:/work/le/a20-android/android$ extract-bsp
```

### Compile:

```
le@le:/work/le/a20-android/android$ make -j8
```

waitting.....

### completed:

```
le@le: /work/le/a20-android/android
Label:
Blocks: 131072
Block groups: 4
Reserved block group size: 31
Created filesystem with 1488/32768 inodes and 99678/131072 blocks
+ '[' 0 -ne 0 -n ]'
Running: simg2img out/target/product/sugar-cubieboard2/obj/PACKAGING/systemimage_intermediates/system.img out/target/product/sugar-cubieboard2/obj/PACKAGING/systemimage_intermediates/unsparse_system.img
Running: e2fsck -f -n out/target/product/sugar-cubieboard2/obj/PACKAGING/systemimage_intermediates/unsparse_system.img
e2fsck 1.41.14 (22-Dec-2010)
Pass 1: Checking inodes, blocks, and sizes
Pass 2: Checking directory structure
Pass 3: Checking directory connectivity
Pass 4: Checking reference counts
Pass 5: Checking group summary information
out/target/product/sugar-cubieboard2/obj/PACKAGING/systemimage_intermediates/unsparse_system.img: 1488/32768 files (0.0% non-contiguous), 99678/131072 blocks
Install system fs image: out/target/product/sugar-cubieboard2/system.img
out/target/product/sugar-cubieboard2/system.img+out/target/product/sugar-cubieboard2/obj/PACKAGING/recovery_patch_intermediates/recovery_from_boot.p maxsize=548110464 blocksize=4224 total=402252512 reserve=5537664
le@le:/work/le/a20-android/android$
```



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**pack after completed :**

```
le@le:/work/le/a20-android/android$ pack
```

The firmware will be generated in the lichee/tools/pack .

```
le@le: /work/le/a20-android/android
le@le:/work/le/a20-android/android$ ls ../lichee/tools/pack/
chips out pack ptools sun7i_android_sugar-cubietruck.img
le@le:/work/le/a20-android/android$
```