

CC-A80 Linux-sdk-card-guide

Version	Diff	Author
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V2.0	More Readalbe	Aaron [aaron@cubietech.com]

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Hardware requirements

- TF Card >= 4G ,class 10 suggested
- Cubieboard4 (CC-A80)
- Ubuntu12.04 PC Intel® Core™ i5-3470 CPU @ 3.20GHz × 4 Memory 8G

Software requirements

- The host operating system : Ubuntu12.04 64bit
- Cross-compilation environment

Cross-compilation environment set up

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

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

```
$sudo apt-get install ia32-libs
```

```
$sudo apt-get install ncurses-dev
```

```
$sudo apt-get install build-essential git u-boot-tools
```

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

```
$sudo apt-get install build-essential u-boot-tools uboot-mkimage
```

```
$sudo apt-get install binutils-arm-linux-gnueabi gcc-arm-linux-gnueabi gcc-arm-linux-gnueabi-f  
cpp-arm-linux-gnueabi-f
```

```
$ sudo apt-get install libusb-1.0-0 libusb-1.0-0-dev git wget fakeroot kernel-package zlib1g-dev  
libncurses5-dev
```

Access to the source code

Build your work space

```
$ mkdir cb4-linux-sdk-card
```

```
$ cd cb4-linux-sdk-card
```

Get kernel source

```
$ git clone https://github.com/cubieboard/CC-A80-kernel-source
```

```
$ mv CC-A80-kernel-source linux-3.4 (master branch)
```

Get products

```
$ git clone https://github.com/cubieboard/CC-A80-products
```

```
$ mv CC-A80-products products (master branch)
```

Get tools

```
$ git clone https://github.com/cubieboard/CC-A80-tools
```

```
$ mv CC-A80-tools tools (master branch)
```

Get U-boot

```
$ git clone https://github.com/cubieboard/CC-A80-binaries
```

```
$ mv CC-A80-binaries binaries (master branch)
```

Get rootfs

```
$ git clone https://github.com/cubieboard/CC-A80-rootfs.git
```

```
$ mv CC-A80-rootfs rootfs (master branch)
```

This is a indexes to rootfs at www.dl.cubieboard.org :

<http://dl.cubieboard.org/model/cc-a80/Source/Linux-distribution/commom/linux-sdk-rootfs/>

You should download the rootfs from dl.cubieboard.org, and move all file to "rootfs" ,The list will update according to the development progress, this 20141119 's list :

```
├── card\_flash\_rootfs.tar.gz
├── debian-rootfs-makebyus.tar.gz
├── linaro-14.04-desktop-20141014.tar.gz
├── linaro-14.04-desktop-20141106.tar.gz
└── README.md
```

|—— card_flash_rootfs.tar.gz | [mini rootfs to move real rootfs to emmc](#)

|—— debian-rootfs-makebyus.tar.gz | [debian-server rootfs](#)

|—— linaro-14.04-desktop-20141014.tar.gz | [lubuntu-rootfs-v0.1](#)

|—— linaro-14.04-desktop-20141106.tar.gz | [lubuntu-rootfs-v0.2](#)

|—— README.md | [rootfs list readme](#)

Check you repo

Folder	linux-3.4	products	tools	binaries	rootfs
Function	kernel source	system configuration	Packaging scripts	u-boot file	file system
Branch	master	master	master	master	master

Products tree :

```

.
├── cb4
│   ├── cb4-debian-server
│   ├── envsetup.sh
│   ├── firstrun_pack
│   ├── install.sh
│   ├── kernel_defconfig
│   ├── overlay
│   └── etc
│       ├── asound.conf
│       └── default

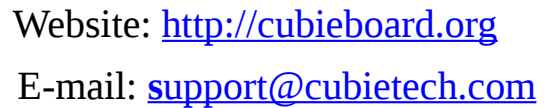
```

```
| | | | keyboard
| | | | dhcp
| | | | dhclient.conf
| | | | environment
| | | | hostname
| | | | hosts
| | | | init.d
| | | | rc.local
| | | | modules
| | | | network
| | | | interfaces
| | | | resolv.conf
| | | rcS
| | sys_config.fex
| | cb4-lubuntu-desktop-hdmi
| | envsetup.sh
| | firstrun_pack
| | install.sh
| | kernel_defconfig
| | overlay
| | | bin
| | | | cubie-fex2bin
| | | | cubie-mount.sh
| | | | cubie-uboot
| | | | cubie-uboot-spl
| | | | cubie-umount.sh
```

```
| | | |—— keybinder
| | | |—— memtester
| | | |—— etc
| | | |—— asound.conf
| | | |—— default
| | | |—— keyboard
| | | |—— dhcp
| | | |—— dhclient.conf
| | | |—— environment
| | | |—— hostname
| | | |—— hosts
| | | |—— init
| | | |—— failsafe.conf
| | | |—— init.d
| | | |—— rc.local
| | | |—— rcS
| | | |—— keybinder.conf
| | | |—— modules
| | | |—— network
| | | |—— interfaces
| | | |—— resolv.conf
| | | |—— udev
| | | |—— rules.d
| | | |—— 11-block-detec.rules
| | | |—— 30-block-umount.rules
| | |—— root
```

```
| | | |—— boot-file
| | | |—— readme.txt
| | | |—— u-boot-spl.bin
| | | |—— u-boot-sun9iw1p1.bin
| | | |—— u-boot-sun9iw1p1_card2.bin
| | | |—— update_sys_config.sh
| | |—— firstrun
| |—— rcS
|—— sys_config.fex
—— cb4-lubuntu-desktop-vga
    —— envsetup.sh
    —— firstrun_pack
    —— install.sh
    —— kernel_defconfig
    —— overlay
    |—— bin
    | |—— cubie-fex2bin
    | |—— cubie-mount.sh
    | |—— cubie-uboot
    | |—— cubie-uboot-spl
    | |—— cubie-umount.sh
    | |—— keybinder
    | |—— memtester
    |—— etc
    | |—— asound.conf
    | |—— default
```

```
| | | └── keyboard
| | └── dhcp
| | | └── dhclient.conf
| | └── environment
| | └── hostname
| | └── hosts
| | └── init
| | | └── failsafe.conf
| | └── init.d
| | | └── rc.local
| | | └── rcS
| | └── keybinder.conf
| | └── modules
| | └── network
| | | └── interfaces
| | └── resolv.conf
| | └── udev
| | └── rules.d
| | └── 11-block-detec.rules
| | └── 30-block-umount.rules
| └── root
| └── boot-file
| | └── readme.txt
| | └── u-boot-spl.bin
| | └── u-boot-sun9iw1p1.bin
| | └── u-boot-sun9iw1p1_card2.bin
```



Inserting tf card into pc

Disk /dev/sdb: 7990 MB, 7990149120 bytes

Compilation

Choose pruduct to compile

[tools/scripts/boardenvsetup.sh](#)

```
aaron@cubietech:~/work/sdk/a80/open/community$ source tools/scripts/envsetup.sh
Products
  0 - cb4
please select a board:0
  0 - cb4-debian-server
  1 - cb4-lubuntu-desktop-hdmi
  2 - cb4-lubuntu-desktop-vga
please select a system:0
/home/aaron/work/sdk/a80/open/community/tools/crosscompiler/bin/arm-linux-gnueabi-gcc

-----
Build sdcard image:
  1. tf card boot
    (1)cb_build_card_image (compile code to prepare cb_install_tfcart)
    (2)cb_install_tfcart dev_label [pack]
        dev_label:      sdb sdc sdd ...
        pack:           the parameter mean we will make a img for dd or win32writer
        cmd for example: cb_install_tfcart sdb

  2. emmc card boot
    (1)cb_build_card_image (compile code to prepare cb_install_flash_card)
    (2)cb_install_flash_card dev_label [pack]
        (install TF card to flash img to emmc)
        dev_label:      sdb sdc sdd ...
        pack:           the parameter mean we will make a img for dd or win32writer
        cmd for example: cb_install_flash_card sdb
-----
```

Compilation guide

```
Build sdcard image:
  1. tf card boot
    (1)cb_build_card_image (compile code to prepare cb_install_tfcart)
    (2)cb_install_tfcart dev_label [pack]
        dev_label:      sdb sdc sdd ...
        pack:           the parameter mean we will make a img for dd or win32writer
        cmd for example: cb_install_tfcart sdb

  2. emmc card boot
    (1)cb_build_card_image (compile code to prepare cb_install_flash_card)
    (2)cb_install_flash_card dev_label [pack]
        (install TF card to flash img to emmc)
        dev_label:      sdb sdc sdd ...
        pack:           the parameter mean we will make a img for dd or win32writer
        cmd for example: cb_install_flash_card sdb
-----
```

You can compile the two card firmware :

- 1) tf card boot : tf booting card firmware
- 2) emmc boot : tf card flash emmc booting card firmware

Tf card boot

```
$ cb_build_card_image
```

It will take about 5-10 Minutes to compile kernel and pack overlay file

```
$ cb_install_tfc card sdx pack
```

sdx : your tf card device in your pc

pack : backup and release your firmware

It will take about 10 minutes to move rootfs to your tf card ,the length of time is depend on your card- writing speed , class 10 tf card was suggested.Now ,you get a bootable tc card ,you can insert this card to you CC-A80 tf card slot to start linux system.

You can also find release firmware here,take debian-server example:

output/cb4/cb4-debian-server/[cb4-debian-server-tfcard.img](#)

EMMC card boot

Clean sdk

```
$ cd cb4-linux-sdk-card/linux-3.4
```

```
$ make mrproper
```

```
$ cd ..
```

```
$ sudo rm -rf build output
```

Compilation

```
$ cb_build_card_image
```

```
$ cb_install_flash_card sdx pack
```

Now ,you get a bootable tc card ,you can insert this card to you CC-A80 tf card slot to flash emmc.

You can also find the release firmware here,take debian-server example:

output/cb4/cb4-debian-server/[cb4-debian-server-tf_flash_emmc.img](#)

Compilation issue

- If you compile fail ,please check your cross-compilation environment
- Please clean sdk when swith to the other boot type
- Please Email me when you in trouble :aaron@cubietech.com