
No.3 Porting android-jb4.2.2 to customized borad

1. Porting u-boot to customized borad

Let us assume customer's board is called "mx6q_ctm", and it is designed based on iMX6q SabreSD evaluation board.

(1) Add customer's board into Makefile

cd ~/myandroid/bootable/bootloader/uboot-imx/

gedit Makefile

…

```
mx6q_ctm_config                 \
mx6q_ ctm_android_config                        \
mx6q_ ctm_mfg_config                \
mx6q_ ctm_iram_config: unconfig
        @[ -z "$(findstring iram_,$@)" ] || \
                { echo "TEXT_BASE = 0x00907000" >$(obj)board/freescale/mx6q_ ctm/config.tmp ; \
                  echo "... with iram configuration" ; \
                }
        @$(MKCONFIG) $(@:_config=) arm arm_cortexa8 mx6q_ ctm freescale mx6
```

…

(2) Add BSP File of customer's board for u-boot

cd ~/myandroid/bootable/bootloader/uboot-imx/board/freescale

ls

In this directory, there are all Freescale bsp files of evaluation board, we should create a new BSP directory for customer's board.

mkdir mx6q_ctm

Then copy SabreSD BSP file to mx6q_ctm

cd mx6q_ctm

cp ../ mx6q_sabresd/* ./

```
[illegible]mon      m5272c3     m547xevb      mpc8323erdb   mpc8536ds    mpc8569mds    mx31ads       mx53_loco         mx6q_sabrelite
[illegible]8evbe    m5275evb    m548xevb      mpc832xemds   mpc8540ads   mpc8572ds     mx31pdk       mx53_pcba         mx6q_sabresd
m52277evb   m5282evb    mpc5121ads    mpc8349emds   mpc8541cds   mpc8610hpcd   mx35_3stack   mx53_smd          mx6sl_arm2
m5235evb    m53017evb   mpc7448hpc2   mpc8349itx    mpc8544ds    mpc8641hpcn   mx50_rdp      mx6q_arm2         mx6sl_evk
m5249evb    m5329evb    mpc8260ads    mpc8360emds   mpc8548cds   mx23_evk      mx51_3stack   mx6q_core         p2020ds
m5253demo   m5373evb    mpc8266ads    mpc8360erdk   mpc8555cds   mx25_3stack   mx51_bbg      mx6q_ctm
m5253evbe   m54451evb   mpc8313erdb   mpc837xemds   mpc8560ads   mx28_evk      mx53_ard      mx6q_hdmidongle
m5271evb    m54455evb   mpc8315erdb   mpc837xerdb   mpc8568mds   mx31_3stack   mx53_evk      mx6q_sabreauto
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/board/freescale$ cd mx6q_ctm/
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/board/freescale/mx6q_ctm$ cp ../mx6q_sabresd/* ./
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/board/freescale/mx6q_ctm$ ls
config.mk  flash_header.S  lowlevel_init.S  Makefile  mx6q_sabresd.c  u-boot.lds
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/board/freescale/mx6q_ctm$
```

Modify file name to the name of customer's board.

mv mx6q_sabresd.c mx6q_ctm.c

```
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/board/freescale$ cd mx6q_ctm/
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/board/freescale/mx6q_ctm$ cp ../mx6q_sabresd/* ./
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/board/freescale/mx6q_ctm$ ls
config.mk  flash_header.S  lowlevel_init.S  Makefile  mx6q_sabresd.c  u-boot.lds
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/board/freescale/mx6q_ctm$ mv mx6q_sabresd.c mx6q_ctm.c
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/board/freescale/mx6q_ctm$ ls
config.mk  flash_header.S  lowlevel_init.S  Makefile  mx6q_ctm.c  u-boot.lds
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/board/freescale/mx6q_ctm$
```

Modify u-boot.lds like following:

…

board/freescale/mx6q_**ctm**/flash_header.o (.text.flasheader)

cpu/arm_cortexa8/start.o

board/freescale/mx6q_ **ctm**/libmx6q_ **ctm**.a (.text)

…

(3) Add header file for customer's board in u-boot

All header files for Freescale evaluation board are in "~/myandroid/bootable/bootloader/uboot-imx/include/configs", Since the board is based on Imx6q SabreSDP board, We can create new header files based on those of SabreSDP board.

cd ~/myandroid/bootable/bootloader/uboot-imx/include/configs

mkdir temp

cd temp

cp cp ../mx6q_sabresd* ./

```
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs$ mkdir temp
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs$ cd temp/
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs/temp$ cp ../mx6q_sabresd* ./
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs/temp$ ls
mx6q_sabresd_android.h  mx6q_sabresd.h  mx6q_sabresd_iram.h  mx6q_sabresd_mfg.h
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs/temp$
```

Change these files' name to customer's :

mv mv mx6q_sabresd_android.h mx6q_ctm_android.h

mv mx6q_sabresd.h mx6q_ctm.h

mv mx6q_sabresd_iram.h mx6q_ctm_iram.h

Base on unbunt 12.04 LTS 64 bit-----ubuntu-12.04-desktop-amd64.iso

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mv mx6q_sabresd_mfg.h mx6q_ctm_mfg.h

```
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs$ mkdir temp
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs$ cd temp/
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs/temp$ cp ../mx6q_sabresd* ./
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs/temp$ ls
mx6q_sabresd_android.h  mx6q_sabresd.h  mx6q_sabresd_iram.h  mx6q_sabresd_mfg.h
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs/temp$ mv mx6q_sabresd_android.h mx6q_ctm_android.h
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs/temp$ mv mx6q_sabresd.h mx6q_ctm.h
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs/temp$ mv mx6q_sabresd_iram.h mx6q_ctm_iram.h
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs/temp$ mv mx6q_sabresd_mfg.h mx6q_ctm_mfg.h
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs/temp$ ls
mx6q_ctm_android.h  mx6q_ctm.h  mx6q_ctm_iram.h  mx6q_ctm_mfg.h
weidong@ubunt1204-64bit:~/myandroid/bootable/bootloader/uboot-imx/include/configs/temp$
```

Copy all file in “temp” to “~/myandroid/bootable/bootloader/uboot-imx/include/configs” :

cp ./* ../

Now we have created new BSP file for customized board in u-boot, then customer can adjust source code according to her schematic, Source code that customer will modify may be “ mx6q_ctm.c/ flash_header.S / mx6q_ctm*.h”

Compiling new BSP file for u-boot:

At first, we should compile an OS Firmware for MFG

export ARCH=arm

export CROSS_COMPILE=~/myandroid/prebuilts/gcc/linux-x86/arm/arm-eabi-4.6/bin/arm-eabi-

make mx6q_ctm_mfg_config

make

Copy this u-boot.bin to “Mfgtools-Rel-4.1.0_130816_MX6Q_UPDATER/Profiles/MX6Q Linux Update/OS Firmware” on window host., and rename it “**u-boot-ctm-mfg.bin**”

Compiling normal u-boot for the board:

make mx6q_ctm_android_config

make

Copy this u-boot.bin to “Mfgtools-Rel-4.1.0_130816_MX6Q_UPDATER/Profiles/MX6Q Linux Update/OS Firmware/ files/android” on window host., and rename it “**u-boot-ctm.bin**”