

i.MX6 SDCARD Secondary Boot Demo

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SDCARD Secondary Boot

Reserved For MBR
(optional)

0x00000000

PERSIST_SECONDARY_BOOT

Reserved for Secondary
Image Table (optional)

0x00000200

20D_8044	SRC General Purpose Register 10 (SRC_GPR10)	32	R/W
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Program Image (Starting
From IVT)

0x00000400

**uboot command:
mw 20d8044 0x40000000
to turn on secondary boot**

Where:

- tag: used as indication of valid secondary image table. Must be 0x00112233.
- firstSectorNumber is the first 512B sector number of the secondary image.

Media Partitions

Table 8-7. Persistent Bits

Bit Name	Bit Location	Description
PERSIST_SECONDARY_BOOT	SRC_GPR10[30]	This bit identifies which image must be used - primary and secondary. Used only for boot modes that support redundant boot.

Table 8-21. Secondary Image Table Format

Reserved (chipNum)
Reserved (driveType)
tag
firstSectorNumber
Reserved (sectorCount)

Files for Secondary Boot Image

1kheader_mx6q.bin :

1024 Bytes header contains **Secondary Image Table** at **0x200**

u-boot-imx6qsabresd_sd_3.10.53.imx

uboot release 3.10.53 367616 Bytes (718x512 or 0x**2CE**x512)

u-boot-imx6qsabresd_sd_3.14.28.imx

uboot release 3.14.28 367616 Bytes (718x512 or 0x**2CE**x512)

```
00000190h: 00 00 00 00 00 00 00 00 tag 0x00112233 00 00
000001a0h: 00 00 00 00 00 00 00 00
0x200 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
UUUUU1c0h: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000001d0h: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000001e0h: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000001f0h: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000200h: 00 00 00 00 00 00 00 00 33 22 11 00 CE 02 00 00
00000210h: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000220h: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000230h: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000240h: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000250h: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000260h: 0 firstSectorNumber 0x2CE 00
00000270h: 0 00
```

How to create the image

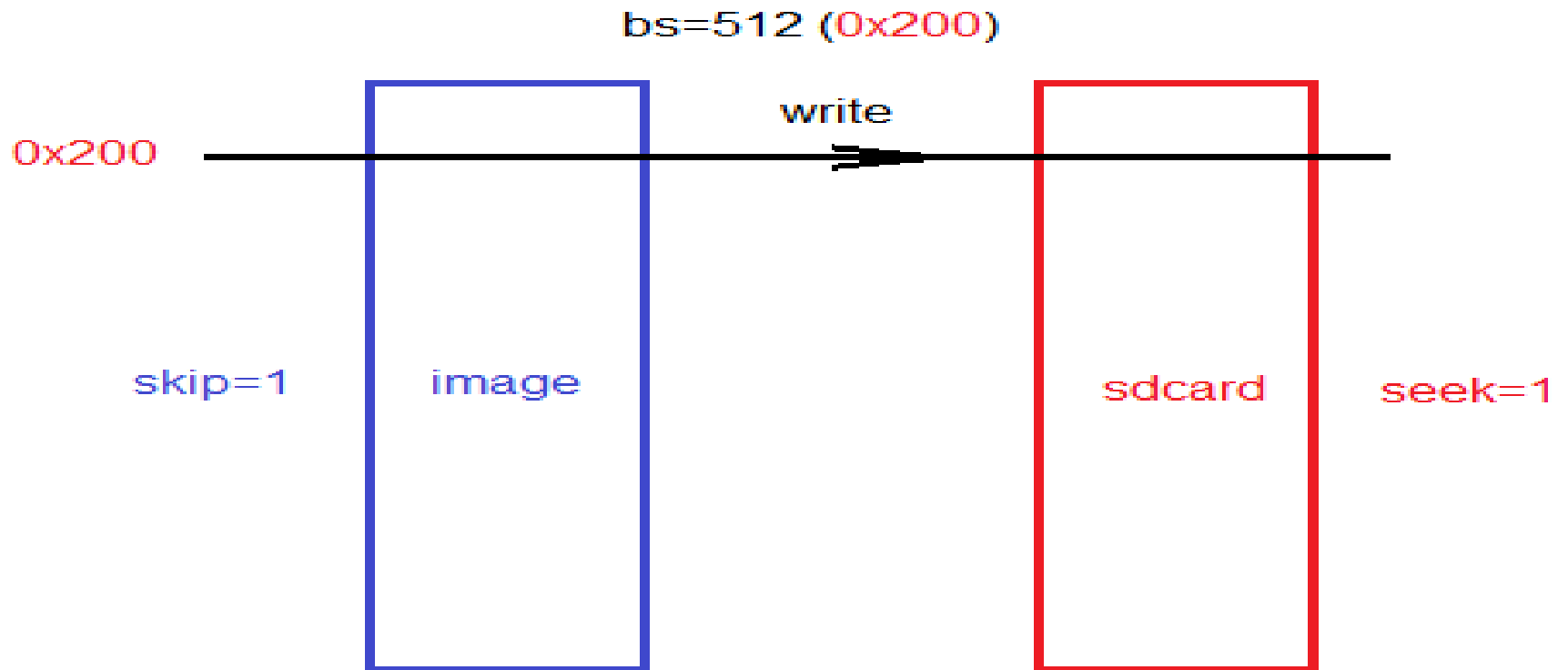
- Use hex editor to modify the 1kheader_mx6q.bin **tag** and **firstSectorNumber**
- Use cat command to merge the 1kheader_mx6q.bin, the primary uboot and the secondary uboot together

```
cat 1kheader_mx6q.bin u-boot-imx6qsabresd_sd_3.10.53.imx u-boot-  
imx6qsabresd_sd_3.14.28.imx > i.MX6Q-secondary_boot_demo.sdcard
```

- **Note:** The cat command is in **ONE** line.

Create SDCARD

```
dd if= i.MX6Q-secondary_boot_demo.sdcard of=/dev/sdc bs=512 skip=1 seek=1
```



How to demo

- Power on to boot the primary uboot in 3.10.53 release
Print out “U-Boot 2014.04 (Jan 05 2015 - 14:54:36)”
- Stop in the uboot
- Turn the **PERSIST_SECONDARY_BOOT**
uboot command: mw 20d8044 0x40000000
- Type reset in uboot
- The secondary uboot in 3.14.28 release is booting
Print out “U-Boot 2014.04 (Mar 20 2015 - 23:54:26)”

Demo Screenshot

```
U-Boot 2014.04 (Jan 05 2015 - 14:54:36)
```

```
CPU: Freescale i.MX6Q rev1.2 at 792 MHz  
CPU: Temperature 32 C, calibration data: 0x58e4f07d  
Reset cause: POR  
Board: MX6-SabreSD  
I2C: ready  
DRAM: 1 GiB  
MMC: FSL_SDHC: 0, FSL_SDHC: 1, FSL_SDHC: 2  
*** Warning - bad CRC, using default environment
```

```
No panel detected: default to Hannstar-XGA
```

```
Display: Hannstar-XGA (1024x768)
```

```
In: serial
```

```
Out: serial
```

```
Err: serial
```

```
Found PFUZE100 deviceid=10,revid=11
```

```
mmc1 is current device
```

```
Net: FEC [PRIME]
```

```
Normal Boot
```

```
Hit any key to stop autoboot: 0
```

```
=> mw 20d8044 0x40000000
```

```
=> reset
```

```
resetting ...
```

```
U-Boot 2014.04 (Mar 20 2015 - 23:54:26)
```

```
CPU: Freescale i.MX6Q rev1.2 at 792 MHz
```

```
CPU: Temperature 36 C, calibration data: 0x58e4f07d
```

```
Reset cause: WDOG
```

```
Board: MX6-SabreSD
```

```
I2C: ready
```

List

- |-- 1kheader_mx6q.bin
- |-- 1kheader_mx6sx.bin
- |-- i.MX6Q-secondary_boot_demo.sdcard
- |-- i.MX6SX-secondary_boot_demo.sdcard
- |-- readme.txt
- |-- i.MX6 SDCARD Secondary Boot Demo.pptx
- |-- u-boot-imx6qsabresd_sd_3.10.53.imx
- |-- u-boot-imx6qsabresd_sd_3.14.28.imx
- |-- u-boot-imx6sxsabresd_sd_3.10.53.imx
- `-- u-boot-imx6sxsabresd_sd_3.14.28.imx