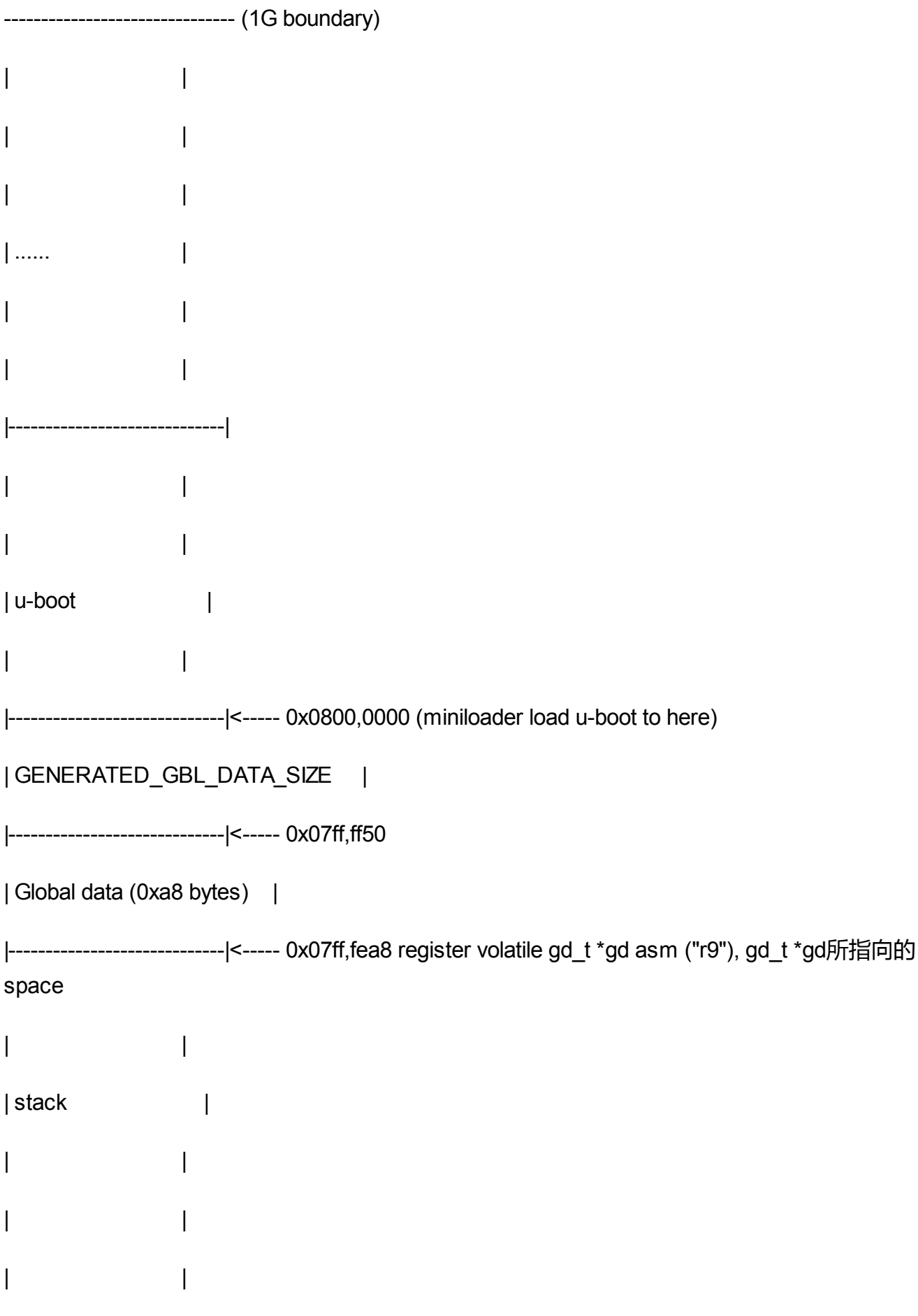
1. before relocating u-boot



Question:

这里GENERATED_GBL_DATA_SIZE region好像完全没必要。它的大小就是sizeof(gd_t) (取整后)。之所以有它，是因为

in include/configs/pegmatite.h

#define CONFIG_SYS_INIT_SP_ADDR (CONFIG_SYS_BASE_ADDR + CONFIG_SYS_INIT_SP_SIZE - GENERATED_GBL_DATA_SIZE)

我觉得好像这里减去GENERATED_GBL_DATA_SIZE是没必要的，正确的应该应该是

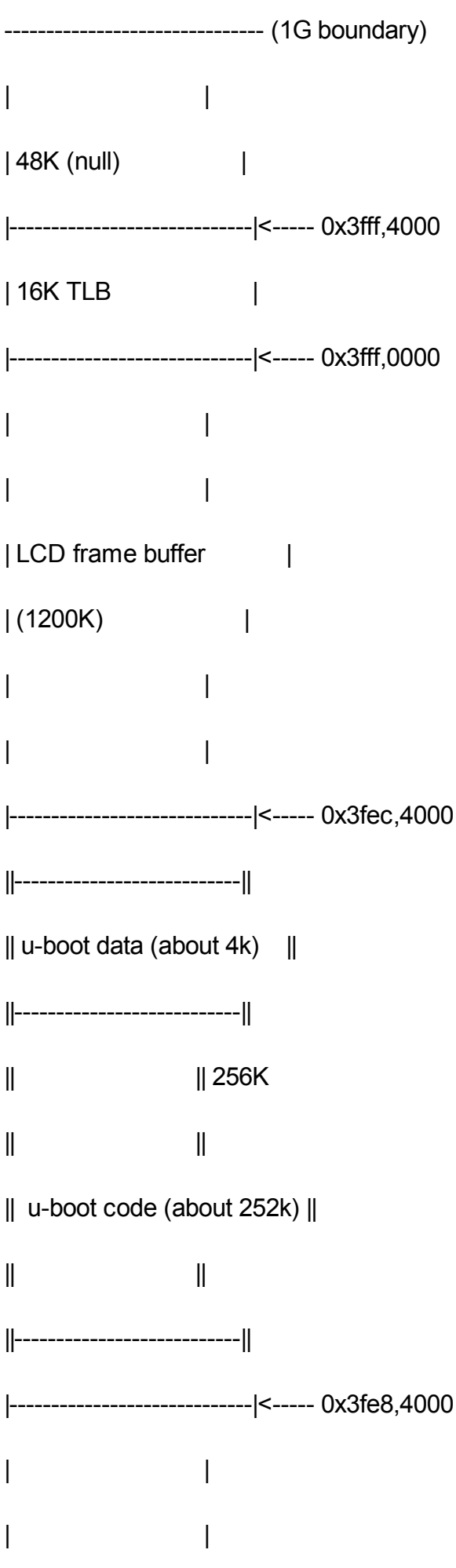
#define CONFIG_SYS_INIT_SP_ADDR (CONFIG_SYS_BASE_ADDR + CONFIG_SYS_INIT_SP_SIZE)

因为gd_t structure space在crt0.S中已经预留了.

```
#if defined(CONFIG_SPL_BUILD) && defined(CONFIG_SPL_STACK)
        ldr     sp, =(CONFIG_SPL_STACK)
#else
        ldr     sp, =(CONFIG_SYS_INIT_SP_ADDR)
#endif
        bic     sp, sp, #7      /* 8-byte alignment for ABI compliance */
        sub     sp, sp, #GD_SIZE        /* allocate one GD above SP */
        bic     sp, sp, #7      /* 8-byte alignment for ABI compliance */
        mov     r9, sp          /* GD is above SP */
        mov     r0, #0
        bl      board_init_f
```

尝试一下修改code，看看u-boot运行是否出错。

2. after relocating u-boot



| malloc heap | malloc()申请的空间从这里分配

|

| 1200K |

|

|----------|<----- 0x3f68,2000

| Board Info (56 bytes) |

|----------|<----- 0x3f68,1fc8

| Global Data (0xa8 bytes) |

|----------|<----- 0x3f68,1f20, register volatile gd_t *gd asm ("r9"), gd_t *gd所指向的space

| 16 bytes (gap) |

|----------|<----- 0x3f68,1f10

|

| stack |

|

|

|

|

|

|

|

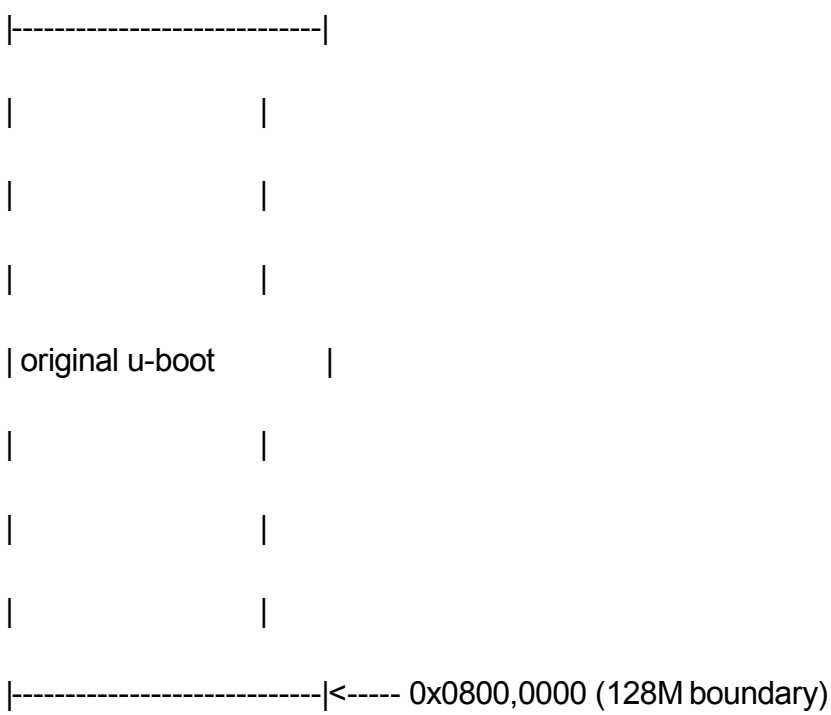
|

| ..... |

|

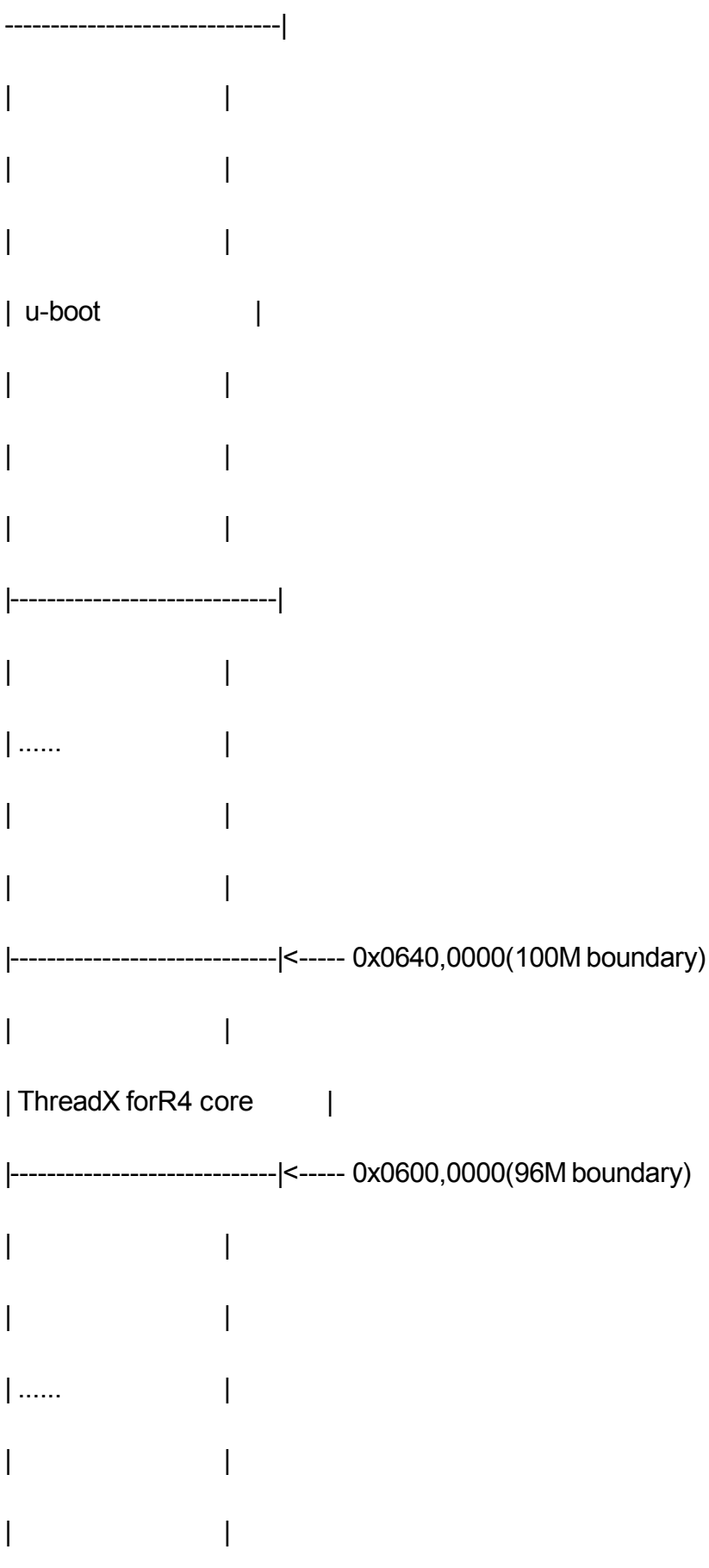
|

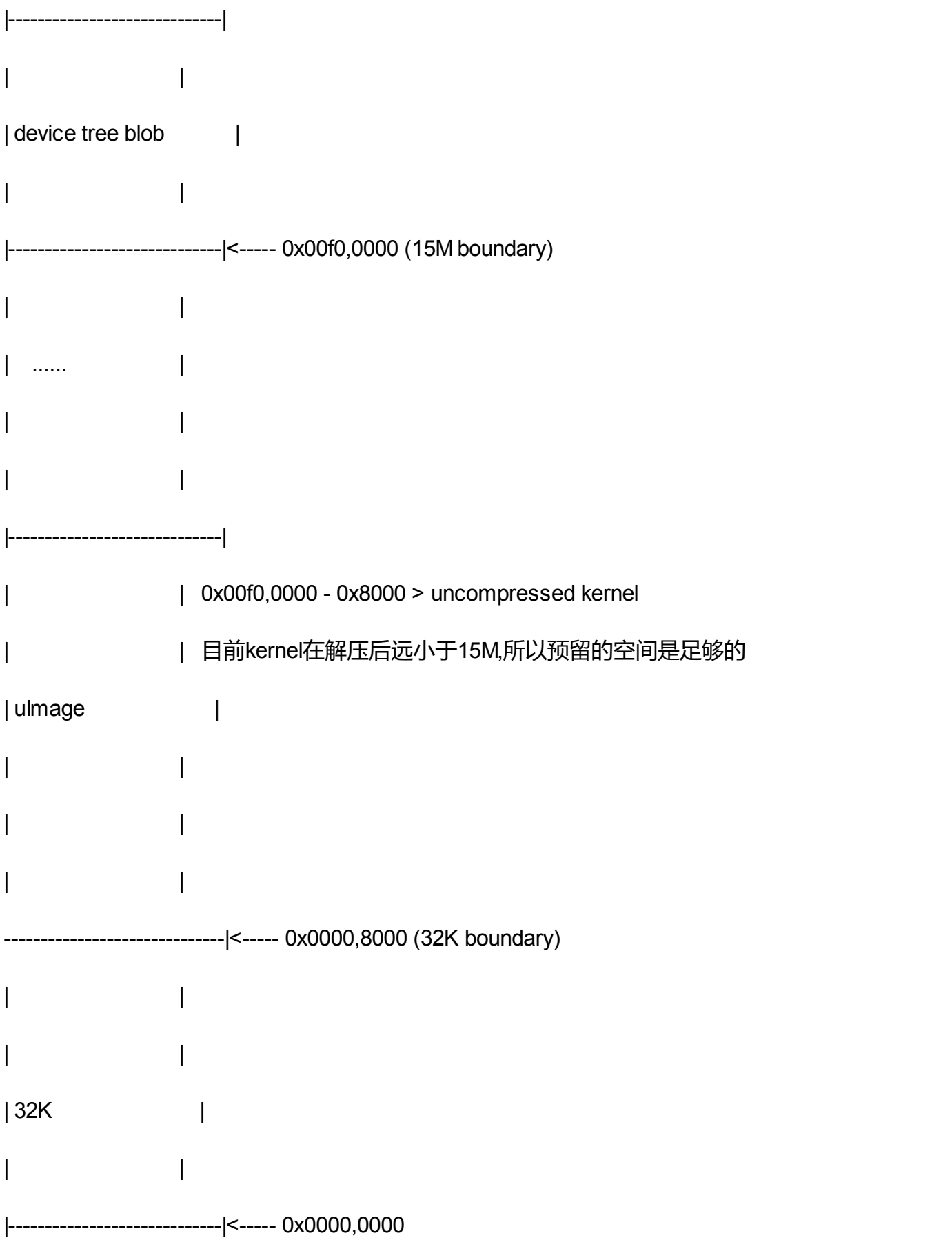
|



整个u-boot memory layout (after relocating)的地址计算在board_init_f() in arch/arm/lib/board.c。

3. u-boot load kernel and device tree blob (dtb)




device tree blob
0x00f0,0000 (15M boundary)
.....
0x00f0,0000 - 0x8000 > uncompressed kernel
目前kernel在解压后远小于15M,所以预留的空间是足够的
uImage
0x0000,8000 (32K boundary)
32K
0x0000,0000