移植最新内核 4.19.8 到 JZ2440 ——编译内核 – CSDN 博客

参考：

http://www.mr-wu.cn/u-boot-tools-binary-package-in-ubuntu/

https://blog.csdn.net/u014032613/article/details/79428190/

https://blog.csdn.net/mybelief321/article/details/10007719

一、准备编译环境和工具

系统：ubuntu16.04

内核： https://www.kernel.org/ 下载最新内核 linux-4.19.8

交叉编译工具：sudo apt-get install gcc-arm-linux-gnueabi

二、初次编译

修改 Makefile，设置 CPU 架构和交叉编译工具链

```
324 ARCH          ?= arm
325 CROSS_COMPILE ?= arm-linux-gnueabi-
```

make s3c2410_defconfig

make menuconfig 设置 EABI

make uImgae

出现以下错误

```
"mkimage" command not found - U-Boot images will not be built
arch/arm/boot/Makefile:90: recipe for target 'arch/arm/boot/uImage' fa
make[1]: *** [arch/arm/boot/uImage] Error 1
arch/arm/Makefile:336: recipe for target 'uImage' failed
make: *** [uImage] Error 2
```

　按照经验 sudo apt-get install uboot-mkimage

提示错误

```
Package uboot-mkimage is not available, but is referred to by another
This may mean that the package is missing, has been obsoleted, or
is only available from another source
However the following packages replace it:
  u-boot-tools:i386 u-boot-tools
```

安装：sudo apt-get install u-boot-tools

成功编译 uImage

三、修改内核

1、

arch\arm\mach-s3c24xx\mach-smdk2440.c
s3c24xx_init_clocks(16934400);
改为
s3c24xx_init_clocks(12000000);

```
static void __init smdk2440_init_time(void)
{
        //s3c2440_init_clocks(16934400);
        s3c2440_init_clocks(12000000);
        samsung_timer_init();
}
```

2、 修改内核分区

```c
static struct mtd_partition smdk_default_nand_part[] = {
        [0] = {
            .name   = "bootloader",
            .size   = SZ_256K,
            .offset = 0,
        },
        [1] = {
            .name   = "params",
            .offset = MTDPART_OFS_APPEND,
            .size   = SZ_128K,
        },
        [2] = {
            .name   = "kernel",
            .offset = MTDPART_OFS_APPEND,
            .size   = SZ_4M,
        },
        [3] = {
            .name   = "rootfs",
            .offset =  MTDPART_OFS_APPEND,
            .size   = MTDPART_SIZ_FULL,
        }
};
```

3、编译

 mv arch/arm/configs/s3c2410_defconfig arch/arm/configs/s3c2440_defconfig

 make s3c2440_defconfig

 make uImage

4、dm9000 网卡支持

在 arch/arm/mach-s3c24xx/mach-smdk2440.c 中没有网卡的板级支持，我们可以仿照 mini2440 书写 smdk2440 的网卡支持。

```c
/* DM9000AEP 10/100 ethernet controller */

static struct resource mini2440_dm9k_resource[] = {
        [0] = DEFINE_RES_MEM(MACH_MINI2440_DM9K_BASE, 4),
        [1] = DEFINE_RES_MEM(MACH_MINI2440_DM9K_BASE + 4, 4),
        [2] = DEFINE_RES_NAMED(IRQ_EINT7, 1, NULL, IORESOURCE_IRQ \
                                          | IORESOURCE_IRQ_HIGHE
```
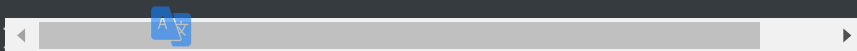
```
};

/*
 * The DM9000 has no eeprom, and it's MAC address is set by
 * the bootloader before starting the kernel.
 */
static struct dm9000_plat_data mini2440_dm9k_pdata = {
        .flags          = (DM9000_PLATF_16BITONLY | DM9000_PLATF_NO_EE
};

static struct platform_device mini2440_device_eth = {
        .name           = "dm9000",
        .id             = -1,
        .num_resources  = ARRAY_SIZE(mini2440_dm9k_resource),
        .resource       = mini2440_dm9k_resource,
        .dev            = {
                .platform_data  = &mini2440_dm9k_pdata,
        },
};
```

将 dm9000 的板级文件，拷贝到 smdk2440 中，重新编译，下载内核即可。

烧写文件系统：

nfs 30000000 192.168.1.120:/home/flnet/kernel/new_file/static_yaffs.yaffs2;nand erase.part rootfs;nand write.yaffs 30000000 460000 $filesize

设置 uboot 参数：

set bootargs console=ttySAC0,115200 root=/dev/mtdblock3 rootfstype=yaffs2 user_debug=1

启动内核：

nfs 30000000 192.168.1.120:/home/flnet/kernel/new_file/uImage;boot

m 30000000

全文完

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使用了 全新的简悦词法分析引擎 beta，点击查看详细说明

全文完

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