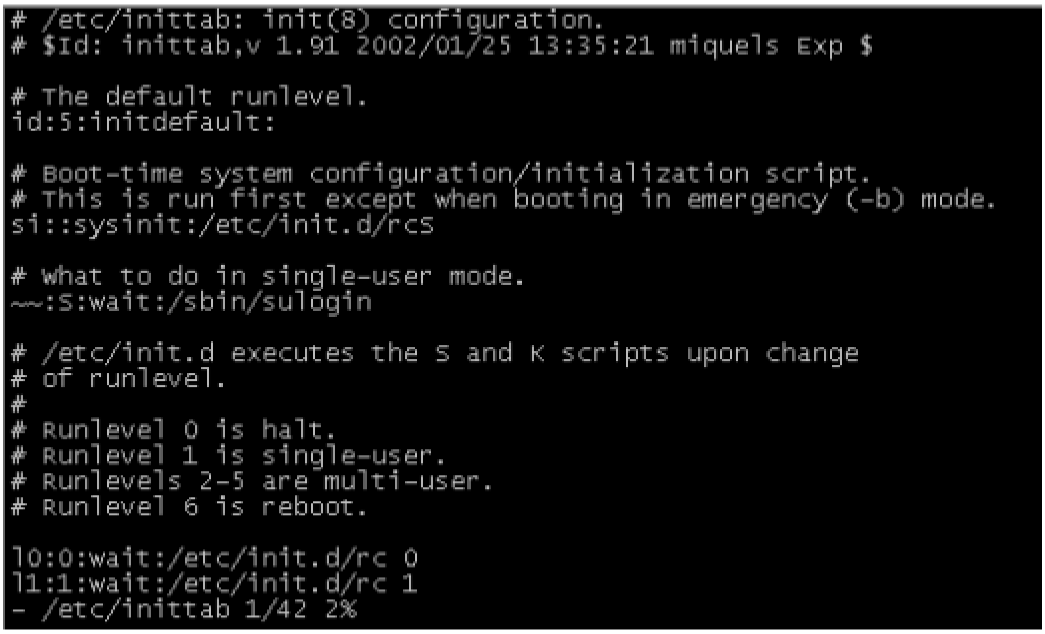
# 一．设置 root 用户自动登录 开机无法进入文件系统

## 1.　统解决方法：

首先修改开发板 linux 系统的 inittab 配置文件，执行如下命令：

**Target#**　vi /etc/inittab



```
# /etc/inittab: init(8) configuration.
# $Id: inittab,v 1.91 2002/01/25 13:35:21 miquels Exp $

# The default runlevel.
id:5:initdefault:

# Boot-time system configuration/initialization script.
# This is run first except when booting in emergency (-b) mode.
si::sysinit:/etc/init.d/rcS

# What to do in single-user mode.
~~:S:wait:/sbin/sulogin

# /etc/init.d executes the S and K scripts upon change
# of runlevel.
#
# Runlevel 0 is halt.
# Runlevel 1 is single-user.
# Runlevels 2-5 are multi-user.
# Runlevel 6 is reboot.

l0:0:wait:/etc/init.d/rc 0
l1:1:wait:/etc/init.d/rc 1
- /etc/inittab 1/42 2%
```

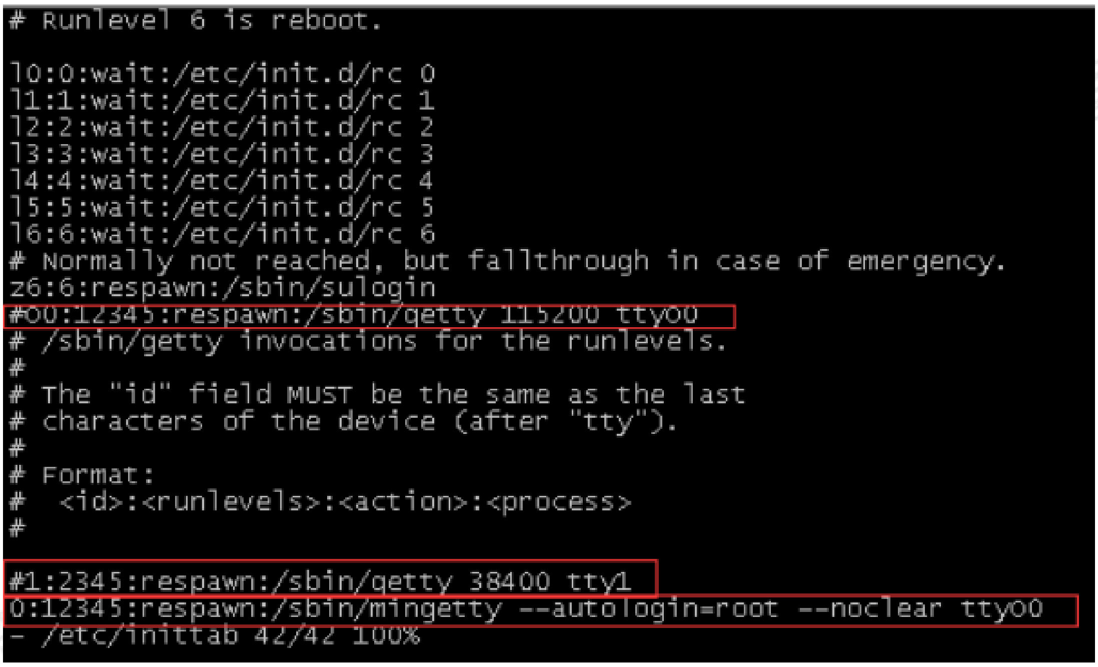
找到如下两行代码，并在其前面添加#，将这两行代码注释掉，代码如下：

O0:12345:respawn:/sbin/getty 115200 ttyO0

1:2345:respawn:/sbin/getty 38400 tty1

在文件最后添加如下代码：

0:12345:respawn:/sbin/mingetty --autologin=root --noclear ttyO0

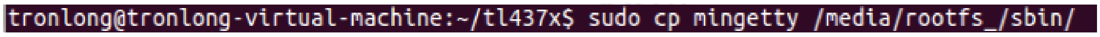


```
# Runlevel 6 is reboot.

l0:0:wait:/etc/init.d/rc 0
l1:1:wait:/etc/init.d/rc 1
l2:2:wait:/etc/init.d/rc 2
l3:3:wait:/etc/init.d/rc 3
l4:4:wait:/etc/init.d/rc 4
l5:5:wait:/etc/init.d/rc 5
l6:6:wait:/etc/init.d/rc 6
# Normally not reached, but fallthrough in case of emergency.
z6:6:respawn:/sbin/sulogin
#O0:12345:respawn:/sbin/getty 115200 ttyO0
# /sbin/getty invocations for the runlevels.
#
# The "id" field MUST be the same as the last
# characters of the device (after "tty").
#
# Format:
#  <id>:<runlevels>:<action>:<process>
#

#1:2345:respawn:/sbin/getty 38400 tty1
0:12345:respawn:/sbin/mingetty --autologin=root --noclear ttyO0
- /etc/inittab 42/42 100%
```

保存并退出 vi。

将"AM437x 开发板光盘资料/demo/app/root 用户自动登录/bin"目录下的 mingetty 程

序拷贝到开发板根文件系统的/sbin 目录下，以下是在 Ubuntu 下使用 U 盘实现拷贝，用户也可使用网络进行拷贝。

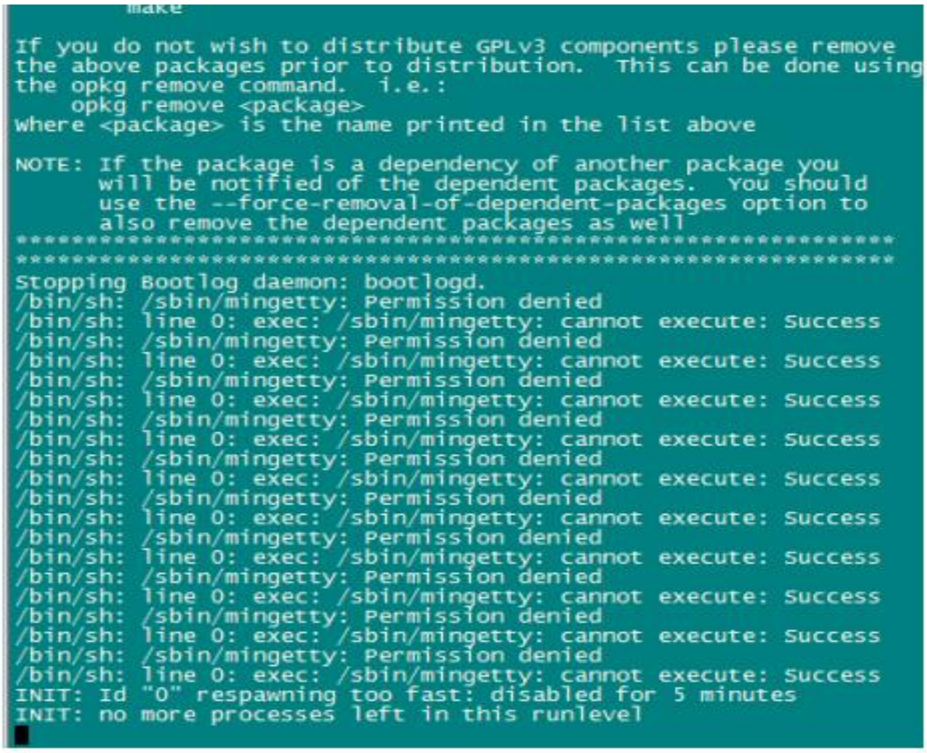


```
tronlong@tronlong-virtual-machine:~/tl437x$ sudo cp mingetty /media/rootfs_/sbin/
```

重启开发板系统，即可直接进入 root 用户。

问题：：:

完成以上步骤 开机重启出现



```
      make

If you do not wish to distribute GPLv3 components please remove
the above packages prior to distribution.  This can be done using
the opkg remove command.  i.e.:
    opkg remove <package>
where <package> is the name printed in the list above

NOTE: If the package is a dependency of another package you
      will be notified of the dependent packages.  You should
      use the --force-removal-of-dependent-packages option to
      also remove the dependent packages as well
***************************************************************
***************************************************************
Stopping Bootlog daemon: bootlogd.
/bin/sh: /sbin/mingetty: Permission denied
/bin/sh: line 0: exec: /sbin/mingetty: cannot execute: Success
/bin/sh: /sbin/mingetty: Permission denied
/bin/sh: line 0: exec: /sbin/mingetty: cannot execute: Success
/bin/sh: /sbin/mingetty: Permission denied
/bin/sh: line 0: exec: /sbin/mingetty: cannot execute: Success
/bin/sh: /sbin/mingetty: Permission denied
/bin/sh: line 0: exec: /sbin/mingetty: cannot execute: Success
/bin/sh: /sbin/mingetty: Permission denied
/bin/sh: line 0: exec: /sbin/mingetty: cannot execute: Success
/bin/sh: /sbin/mingetty: Permission denied
/bin/sh: line 0: exec: /sbin/mingetty: cannot execute: Success
/bin/sh: /sbin/mingetty: Permission denied
/bin/sh: line 0: exec: /sbin/mingetty: cannot execute: Success
/bin/sh: /sbin/mingetty: Permission denied
/bin/sh: line 0: exec: /sbin/mingetty: cannot execute: Success
/bin/sh: /sbin/mingetty: Permission denied
/bin/sh: line 0: exec: /sbin/mingetty: cannot execute: Success
/bin/sh: /sbin/mingetty: Permission denied
/bin/sh: line 0: exec: /sbin/mingetty: cannot execute: Success
INIT: Id "0" respawning too fast: disabled for 5 minutes
INIT: no more processes left in this runlevel
█
```

解决方法：

mingetty 倒进/sbin 文件下 要使用 chmod +x /sbin/mingetty 修改权限

# 二．执行 make menucofig 发生错误“Unable to find the ncurses libraries or the required header files”的解决方法

起始

执行 make menuconfig 有错误发生

错误:

*** Unable to find the ncurses libraries or the

```
*** required header files.
*** 'make menuconfig' requires the ncurses libraries.
***
*** Install ncurses (ncurses-devel) and try again.
***
make[1]: *** [scripts/kconfig/dochecklxdialog] 错误 1
make: *** [menuconfig] 错误 2
```

可以看出，是因为找不到 ncurses 导致的错误。那么尝试安装 ncurses

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

信息：

```
正在读取软件包列表... 完成
正在分析软件包的依赖关系树
读取状态信息... 完成
现在没有可用的软件包 ncurses，但是它被其他的软件包引用了。
这可能意味着这个缺失的软件包可能已被废弃，
或者只能在其他发布源中找到
E：　软件包 ncurses 还没有可供安装的候选者
```

根据 http://www.linuxquestions.org/qu ... nfig-archum-311781/

再试：

```
$sudo apt-get install libncurses*
```

信息：

```
正在读取软件包列表... 完成
正在分析软件包的依赖关系树
读取状态信息... 完成
注意，根据正则表达式“libncurses*” 选中了 libncurses4
注意，根据正则表达式“libncurses*” 选中了 libncurses5
注意，根据正则表达式“libncurses*” 选中了 libncurses-ruby1.8
注意，根据正则表达式“libncurses*” 选中了 libncurses-ryby1.9
注意，根据正则表达式“libncurses*” 选中了 libncurses-dev
注意，根据正则表达式“libncurses*” 选中了 libncursesw5-dbg
注意，根据正则表达式“libncurses*” 选中了 libncursesw5-dev
注意，根据正则表达式“libncurses*” 选中了 libncurses-ruby
```

```
注意，根据正则表达式“libncurses*” 选中了 libncurses5-dbg
注意，根据正则表达式“libncurses*” 选中了 libncurses5-dev
注意，根据正则表达式“libncurses*” 选中了 libncursesw5
已经不需要下列自动安装的软件包：
libchewing3-data ttf-wqy-zenhei scim-chewing thunderbird-locale-zh-tw
language-support-translations-zh
libchewing3 xfonts-wqy openoffice.org-l10n-zh-cn
openoffice.org-l10n-zh-tw openoffice.org-help-zh-cn
openoffice.org-help-zh-tw language-support-fonts-zh
使用‘apt-get autoremove’ 来删除它们。
将会安装下列额外的软件包：
libncurses-ruby libncurses-ruby1.8 libncurses-ruby1.9 libncurses4
libncurses5-dbg libncurses5-dev
libncursesw5-dbg libncursesw5-dev libruby1.8 libruby1.9 ruby1.8 ruby1.9
建议安装的软件包：
rdoc1.8 ri1.8 ruby1.8-examples rdoc1.9 ri1.9 ruby1.9-examples
下列【新】软件包将被安装：
libncurses-ruby libncurses-ruby1.8 libncurses-ruby1.9 libncurses4
libncurses5-dbg libncurses5-dev
libncursesw5-dbg libncursesw5-dev libruby1.8 libruby1.9 ruby1.8 ruby1.9
共升级了 0 个软件包，新安装了 12 个软件包，要卸载 0 个软件包，有 60 个
软件未被升级。
需要下载 8868kB 的软件包。
操作完成后，会消耗掉 33.9MB 的额外磁盘空间。
您希望继续执行吗？[Y/n]
```

选择 Y 继续执行，完成后，执行 sudo make menuconfig，OK！！

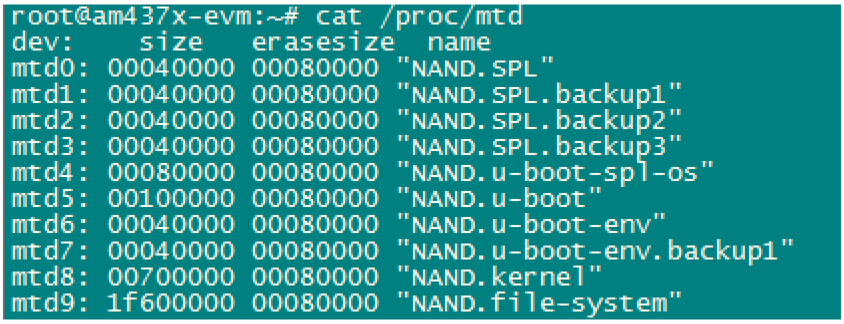
## 三．固化 linux 系统到 NAND FLASH

### 问题：擦除 NAND FLASH 下 SPI 分区和 SPI 备份分区失败 以及写失败

1. 查看系统是否分区正常，执行如下命令：

```
Target# cat /proc/mtd
```

错误



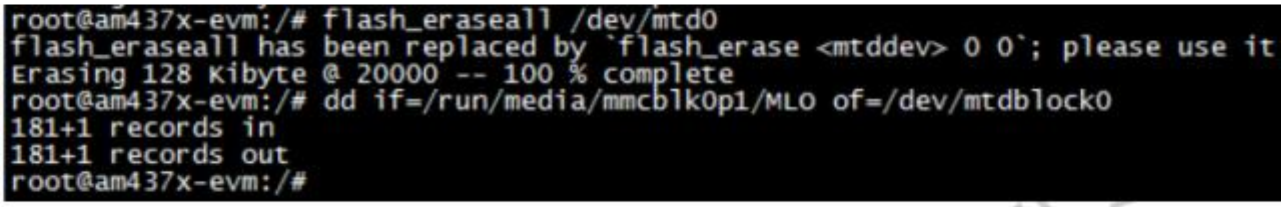
```
root@am437x-evm:~# cat /proc/mtd
dev:    size   erasesize  name
mtd0: 00040000 00080000 "NAND.SPL"
mtd1: 00040000 00080000 "NAND.SPL.backup1"
mtd2: 00040000 00080000 "NAND.SPL.backup2"
mtd3: 00040000 00080000 "NAND.SPL.backup3"
mtd4: 00080000 00080000 "NAND.u-boot-spl-os"
mtd5: 00100000 00080000 "NAND.u-boot"
mtd6: 00040000 00080000 "NAND.u-boot-env"
mtd7: 00040000 00080000 "NAND.u-boot-env.backup1"
mtd8: 00700000 00080000 "NAND.kernel"
mtd9: 1f600000 00080000 "NAND.file-system"
```

2.MLO 文件已经存放在 SD 启动卡 boot 分区。启动开发板，进入开发板文件系统。 擦除 NAND FLASH 下 SPL 分区和 SPL 备份分区，执行如下命令：

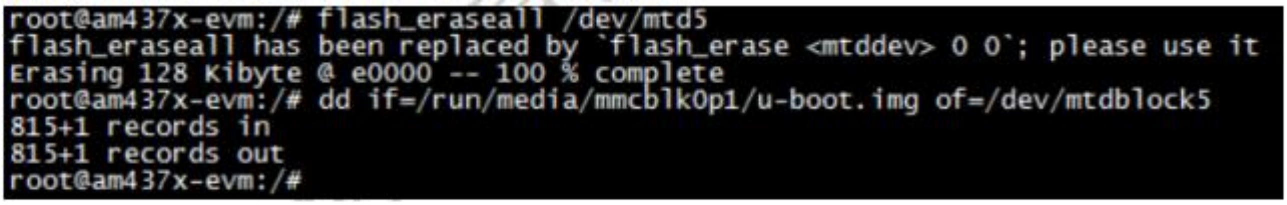
```
Target# flash_eraseall /dev/mtd0
Target# flash_eraseall /dev/mtd1
Target# flash_eraseall /dev/mtd2
Target# flash_eraseall /dev/mtd3
```

将 MLO 文件烧写到 NAND FLASH 下 SPL 分区和 SPL 备份分区，执行如下命令：

```
Target# dd if=/run/media/mmcblk0p1/MLO of=/dev/mtdblock0
Target# dd if=/run/media/mmcblk0p1/MLO of=/dev/mtdblock1
Target# dd if=/run/media/mmcblk0p1/MLO of=/dev/mtdblock2
Target# dd if=/run/media/mmcblk0p1/MLO of=/dev/mtdblock3
```

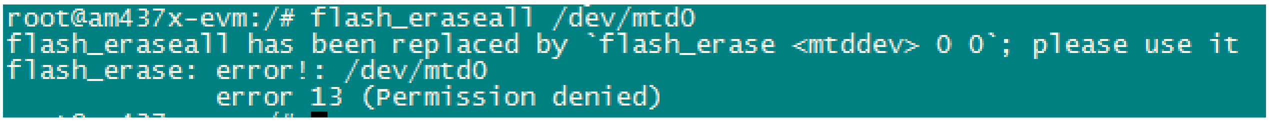


```
root@am437x-evm:/# flash_eraseall /dev/mtd0
flash_eraseall has been replaced by `flash_erase <mtddev> 0 0`; please use it
Erasing 128 Kibyte @ 20000 -- 100 % complete
root@am437x-evm:/# dd if=/run/media/mmcblk0p1/MLO of=/dev/mtdblock0
181+1 records in
181+1 records out
root@am437x-evm:/#
```



```
root@am437x-evm:/# flash_eraseall /dev/mtd5
flash_eraseall has been replaced by `flash_erase <mtddev> 0 0`; please use it
Erasing 128 Kibyte @ e0000 -- 100 % complete
root@am437x-evm:/# dd if=/run/media/mmcblk0p1/u-boot.img of=/dev/mtdblock5
815+1 records in
815+1 records out
root@am437x-evm:/#
```

# 出现错误：



```
root@am437x-evm:/# flash_eraseall /dev/mtd0
flash_eraseall has been replaced by `flash_erase <mtddev> 0 0`; please use it
flash_erase: error!: /dev/mtd0
             error 13 (Permission denied)
```

# 错误原因：

# 因为 nand 的擦除大小大于 MTD  分区大小导致

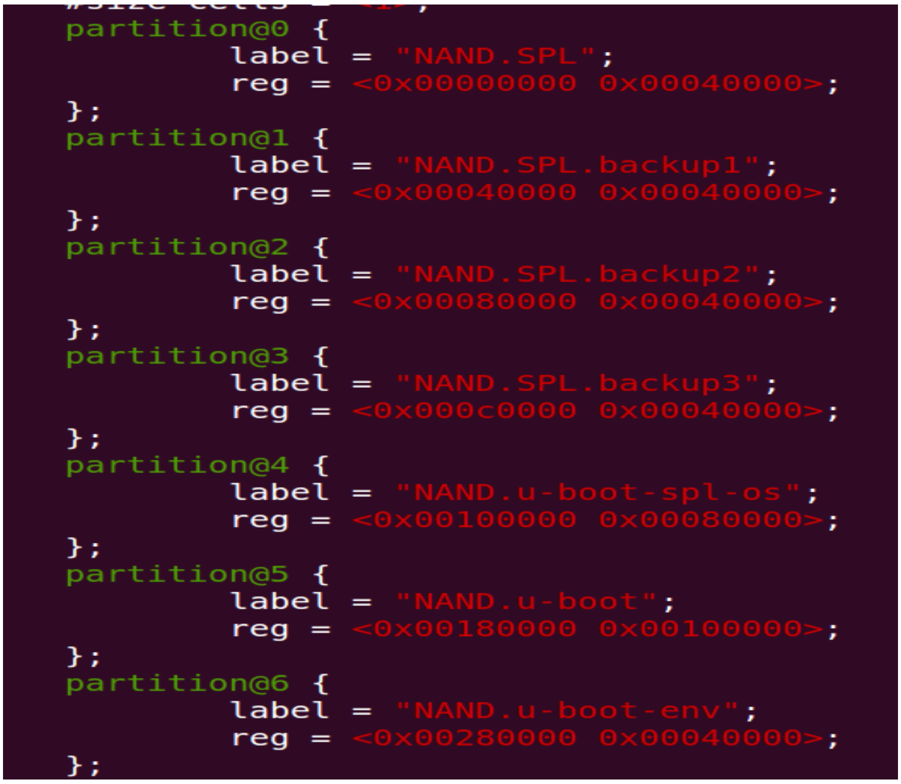
# MTD 无法访问，以及 1G nand 与 512M nand 芯片型号的和大小的不同还有片内分区的大小不同。

## 解决方法：

### 1.修改 MTD 分区

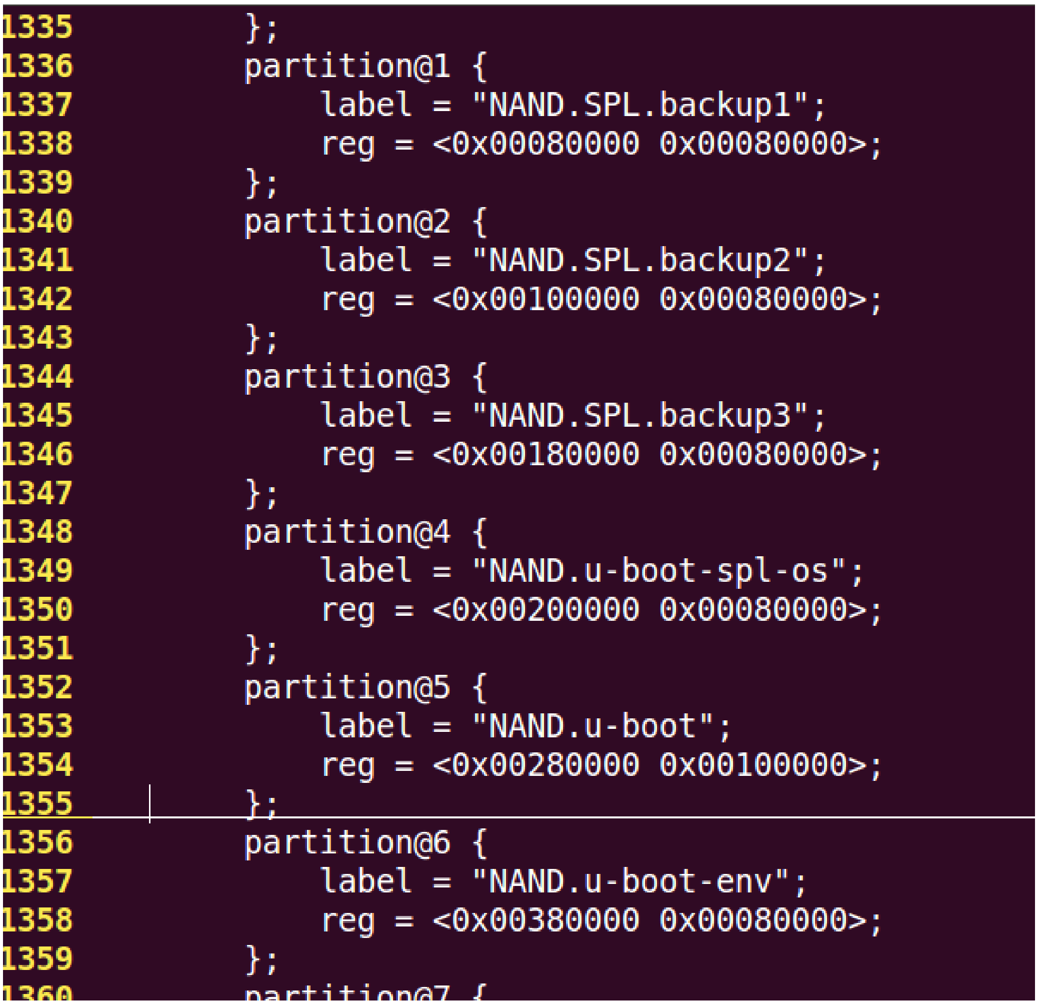
修改 linux-3.14/arch/arm/boot/dts/am437x-gp-evm.dts

修改前:（适用于 512M nand flash）



```
        #size-cells = <1>;
        partition@0 {
                label = "NAND.SPL";
                reg = <0x00000000 0x00040000>;
        };
        partition@1 {
                label = "NAND.SPL.backup1";
                reg = <0x00040000 0x00040000>;
        };
        partition@2 {
                label = "NAND.SPL.backup2";
                reg = <0x00080000 0x00040000>;
        };
        partition@3 {
                label = "NAND.SPL.backup3";
                reg = <0x000c0000 0x00040000>;
        };
        partition@4 {
                label = "NAND.u-boot-spl-os";
                reg = <0x00100000 0x00080000>;
        };
        partition@5 {
                label = "NAND.u-boot";
                reg = <0x00180000 0x00100000>;
        };
        partition@6 {
                label = "NAND.u-boot-env";
                reg = <0x00280000 0x00040000>;
        };
```

修改后(适用于 1G nand flash）



```
        };
        partition@1 {
            label = "NAND.SPL.backup1";
            reg = <0x00080000 0x00080000>;
        };
        partition@2 {
            label = "NAND.SPL.backup2";
            reg = <0x00100000 0x00080000>;
        };
        partition@3 {
            label = "NAND.SPL.backup3";
            reg = <0x00180000 0x00080000>;
        };
        partition@4 {
            label = "NAND.u-boot-spl-os";
            reg = <0x00200000 0x00080000>;
        };
        partition@5 {
            label = "NAND.u-boot";
            reg = <0x00280000 0x00100000>;
        };
        partition@6 {
            label = "NAND.u-boot-env";
            reg = <0x00380000 0x00080000>;
        };
        partition@7 {
```

**修改完成后 重新编译生成 am437x-gp-evm.dtb**

**从新制作 SD 启动卡**

## 1. 修改 u-boot 里的 NAND 启动信息

**修改 u-boot 目录下** include/configs/am43xx_evm.h

#define CONFIG_SYS_NAND_PAGE_SIZE 2048

#define CONFIG_SYS_NAND_OOBSIZE 128

改为

#define CONFIG_SYS_NAND_PAGE_SIZE 4096

#define CONFIG_SYS_NAND_OOBSIZE 224

```
#define CONFIG_SYS_NAND_ECCPOS { 2, 3, 4, 5, 6, 7, 8, 9, \
10, 11, 12, 13, 14, 15, 16, 17, 18, 19, \
20, 21, 22, 23, 24, 25, 26, 27, 28, 29, \
30, 31, 32, 33, 34, 35, 36, 37, 38, 39, \
40, 41, 42, 43, 44, 45, 46, 47, 48, 49, \
50, 51, 52, 53, 54, 55, 56, 57, 58, 59, \
60, 61, 62, 63, 64, 65, 66, 67, 68, 69, \
70, 71, 72, 73, 74, 75, 76, 77, 78, 79, \
80, 81, 82, 83, 84, 85, 86, 87, 88, 89, \
90, 91, 92, 93, 94, 95, 96, 97, 98, 99, \
100, 101, 102, 103, 104, 105, \
}
```

改为

```
#define CONFIG_SYS_NAND_ECCPOS \ { 2, 3, 4, 5, 6, 7, 8, 9, \ 10, 11, 12, 13, 14,
15, 16, 17, 18, 19, \ 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, \ 30, 31, 32, 33,
34, 35, 36, 37, 38, 39, \ 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, \ 50, 51, 52,
53, 54, 55, 56, 57, 58, 59, \ 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, \ 70, 71,
72, 73, 74, 75, 76, 77, 78, 79, \ 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, \ 90,
91, 92, 93, 94, 95, 96, 97, 98, 99, \ 100, 101, 102, 103, 104, 105, 106, 107,
108, 109, \ 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, \ 120, 121, 122,
123, 124, 125, 126, 127, 128, 129, \ 130, 131, 132, 133, 134, 135, 136, 137,
138, 139, \ 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, \ 150, 151, 152,
153, 154, 155, 156, 157, 158, 159, \ 160, 161, 162, 163, 164, 165, 166, 167,
168, 169, \ 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, \ 180, 181, 182,
183, 184, 185, 186, 187, 188, 189, \ 190, 191, 192, 193, 194, 195, 196, 197,
198, 199, \ 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, }
```

```
"256k(NAND.SPL)," \
"256k(NAND.SPL.backup1)," \
"256k(NAND.SPL.backup2)," \
"256k(NAND.SPL.backup3)," \
"512k(NAND.u-boot-spl-os)," \
"1m(NAND.u-boot)," \
"256k(NAND.u-boot-env)," \
"256k(NAND.u-boot-env.backup1)," \
"7m(NAND.kernel)," \
"-(NAND.file-system)"
```

改为

```
"512k(NAND.SPL)," \
"512k(NAND.SPL.backup1)," \
 “512k(NAND.SPL.backup2)," \
"512k(NAND.SPL.backup3)," \
"512k(NAND.u-boot-spl-os)," \
"1m(NAND.u-boot)," \
"512k(NAND.u-boot-env)," \
"512k(NAND.u-boot-env.backup1)," \
"7m(NAND.kernel)," \
"-(NAND.file-system)"
```

```
#define CONFIG_SYS_NAND_U_BOOT_OFFS 0x00180000
```

改为

```
#define CONFIG_SYS_NAND_U_BOOT_OFFS 0x00280000
```

```
#define CONFIG_SYS_NAND_SPL_KERNEL_OFFS 0x00300000 /* kernel offset */
```

改为

```
#define CONFIG_SYS_NAND_SPL_KERNEL_OFFS 0x00480000 /*kernel offset*/
```

# 四 .SSH 无法登陆

## 解决方法：

在开发板操作系统下：

打开文件系统的 /etc/passwd 文件

检查第一行是否是

```
root::0:0:root:/home/root:/bin/ash
```

如果是，将该行替换成如下内容

```
root::0:0:root:/home/root:/bin/sh
```

重新测试 ssh 连接