Compiling busy box dynamically for the firsts rootfs on mmcblk0p2:


```
[ ] Support NSA Security Enhanced Linux
[ ] Clean up all memory before exiting (usually not needed)
[*] Support LOG_INFO level syslog messages
--- Build Options
[ ] Build static binary (no shared libs)
[ ]     Build position independent executable (NEW)
 ↓(+)
                      <Select>      < Exit >    < Help >
```

```
work properly.
-----------------------------------------------
adhamwalaa@adhamwalaa-G3-3500:~/embedded_linux_kitchen/busybox$ cd _install/
adhamwalaa@adhamwalaa-G3-3500:~/embedded_linux_kitchen/busybox/_install$ cd bin/
adhamwalaa@adhamwalaa-G3-3500:~/embedded_linux_kitchen/busybox/_install/bin$ file busybox
busybox: ELF 32-bit LSB executable, ARM, EABI5 version 1 (SYSV), dynamically linked, interpreter /lib/ld-linux-armhf.so.3, for GNU/Linux 3.2.0, stripped
adhamwalaa@adhamwalaa-G3-3500:~/embedded_linux_kitchen/busybox/_install/bin$ cd ..
adhamwalaa@adhamwalaa-G3-3500:~/embedded_linux_kitchen/busybox/_install$ sudo cp -r ./* ../../qemu/root1/
[sudo] password for adhamwalaa:
adhamwalaa@adhamwalaa-G3-3500:~/embedded_linux_kitchen/busybox/_install$ =
```
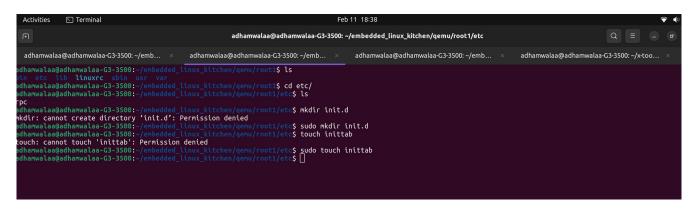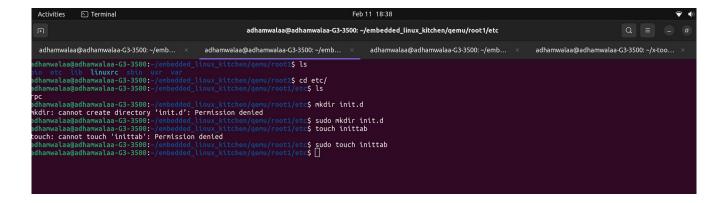
copying the required libs to the rootfs:

```
adhamwalaa@adhamwalaa-G3-3500:~/embedded_linux_kitchen/busybox$ cd _install/
adhamwalaa@adhamwalaa-G3-3500:~/embedded_linux_kitchen/busybox/_install$ cd bin/
adhamwalaa@adhamwalaa-G3-3500:~/embedded_linux_kitchen/busybox/_install/bin$ file busybox
busybox: ELF 32-bit LSB executable, ARM, EABI5 version 1 (SYSV), dynamically linked, interpreter /lib/ld-linux-armhf.so.3, for GNU/Linux 3.2.0, stripped
adhamwalaa@adhamwalaa-G3-3500:~/embedded_linux_kitchen/busybox/_install/bin$ cd ..
adhamwalaa@adhamwalaa-G3-3500:~/embedded_linux_kitchen/busybox/_install$ sudo cp -r ./* ../../qemu/root1/
[sudo] password for adhamwalaa:
adhamwalaa@adhamwalaa-G3-3500:~/embedded_linux_kitchen/busybox/_install$ cd
adhamwalaa@adhamwalaa-G3-3500:~$ cd x-tools/arm-cortexa9_neon-linux-gnueabihf/
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf$ ls
arm-cortexa9_neon-linux-gnueabihf  bin  build.log.bz2  include  lib  libexec  share
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf$ cd arm-cortexa9_neon-linux-gnueabihf/
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf$ ls
bin  debug-root  include  lib  sysroot
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf$ cd sysroot/
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf/sysroot$ ls
etc  lib  sbin  usr  var
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf/sysroot$ sudo cp sbin/* ~/embedded_linux_kitchen/qemu/root1/s
bin/
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf/sysroot$ sudo cp -r lib etc var ~/embedded_linux_kitchen/qemu
/root1
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf/sysroot$ sudo cp usr/bin/* ~/embedded_linux_kitchen/qemu/root
1/usr/bin/
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf/sysroot$ sudo cp usr//* ~/embedded_linux_kitchen/qemu/root1/u
sr/bin/
bin/    include/ lib/    libexec/ sbin/    share/
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf/sysroot$ ls usr/
bin/    include/ lib/    libexec/ sbin/    share/
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf/sysroot$ sudo cp usr/sbin/ ~/embedded_linux_kitchen/qemu/root
1/usr/sbin/
cp: -r not specified; omitting directory 'usr/sbin/'
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf/sysroot$ sudo cp -r usr/sbin/ ~/embedded_linux_kitchen/qemu/r
oot1/usr/sbin/
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf/sysroot$ sudo cp -r usr/include/ ~/embedded_linux_kitchen/qem
u/root1/usr/
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf/sysroot$ sudo cp -r usr/libexec/ ~/embedded_linux_kitchen/qem
u/root1/usr/
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf/sysroot$ sudo cp -r usr/share/ ~/embedded_linux_kitchen/qemu/
root1/usr/
adhamwalaa@adhamwalaa-G3-3500:~/x-tools/arm-cortexa9_neon-linux-gnueabihf/arm-cortexa9_neon-linux-gnueabihf/sysroot$ 
```

Busybox init process:

on startup the inittab first runs the script rcS under the init.d directory the waits for input from the user to open up a shell:

Final output:

If the user presses 1:

```
Mounting root filesystem from /dev/mmcblk0p2...
EXT4-fs (mmcblk0p2): mounted filesystem 52344936-6f28-403c-b78c-3adc8c019d7e r/w with ordered data mode. Quota mode: disabled.
Root filesystem mounted successfully!
Switching to new root...
random: crng init done

Please press Enter to activate this console. drm-clcd-pl111 10020000.clcd: DVI muxed to daughterboard 1 (core tile) CLCD
drm-clcd-pl111 10020000.clcd: initializing Versatile Express PL111
amba 1000f000.wdt: deferred probe pending
amba 10020000.clcd: deferred probe pending
amba 100e0000.memory-controller: deferred probe pending
amba 100e1000.memory-controller: deferred probe pending
amba 100e5000.watchdog: deferred probe pending
i2c 0-0039: deferred probe pending

/bin/sh: can't access tty; job control turned off
~ #
~ #
~ #
~ # ls
bin        etc      new_root  sbin     tmp      var
```