

Embedded Linux

U-Boot

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<http://hhoegl.informatik.hs-augsburg.de/hhwiki/FrontPage>

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U-Boot [1/2]

- von www.denx.de (München): <http://www.denx.de/wiki/U-Boot>
- MELPv3, Kap. 3
- ROM Loader (1. Stufe)
- früher: MLO = Mmc LOader (2. Stufe), MMC MultiMedia Card.
- jetzt: SPL (Secondary Program Loader) statt MLO
- TPL (Tertiary Program Loader), das eigentliche U-Boot
- `bootenv`
- `/uEnv.txt`
- Block `/uEnv.txt`

```
setenv bootenv notexist.txt
boot
```

- AM335x TRM, Kap. 26 (“Initialization”), “Raw Mode”, “FAT Mode”
- Old partition scheme (MELPv3, `format-sdcard.sh`)
 - “FAT Mode”
 - partition 1 is a FAT partition holding MLO and `u-boot.img`
 - partition 2 is Linux (Root Filesystem)
- New partition scheme (<https://beagleboard.org/latest-images>)
 - “Raw Mode”
 - partition 1 is Linux, nothing else
 - MLO and `u-boot` written by `dd` to Flash
 - http://elinux.org/Beagleboard:U-boot_partitioning_layout_2.0

- /uEnv.txt contents for network booting:

Variable uenvcmd

```
optargs=quiet
uenvcmdx=echo Booting via tftp (Xinu); \
    setenv saloadaddr 0x81000000; setenv ipaddr 192.168.0.54; \
    setenv serverip 192.168.0.5; tftpboot ${saloadaddr} xinu.bin; go ${saloadaddr}
uenvcmd=run uenvcmdx
```

- https://elinux.org/Beagleboard:BeagleBoneBlack_Debian#U-Boot_Overlays

- https://elinux.org/RPi_U-Boot
- Quade, Kunst, U-Boot auf dem Raspberry Pi, Kern-Technik Nr. 71, Linux Magazin 12/2013
<https://hhoegl.informatik.hs-augsburg.de/elinux/kt/kt-71/kt71.pdf>

Zwei Anleitungen zum Kompilieren

- MELPv3, Kap. 3
- Robert C. Nelson, kümmert sich bei TI um Linux

<https://forum.digikey.com/t/debian-getting-started-with-the-beaglebone-black/12967>

Siehe elinux-remote:

```
hhoeglelinux-remote:/home/elinux_work/hoegl_h/Sommer2022/Kap3/
```

```
$ git clone -b v2021.10 https://github.com/u-boot/u-boot --depth=1
```

```
$ cd u-boot
```

```
$ git pull --no-edit https://github.com/beagleboard/u-boot v2021.10-bbb.io-am335x
```

```
$ export CC=/opt/x-tools/arm-cortex_a8-linux-gnueabi/hf/bin/arm-cortex_a8-linux-gnueabi/hf-
```

```
$ make ARCH=arm CROSS_COMPILE=${CC} distclean
```

```
$ make ARCH=arm CROSS_COMPILE=${CC} am335x_evm_defconfig
```

```
$ make ARCH=arm CROSS_COMPILE=${CC}
```