phyCORE-i.MX6 BSP 16.1.x

http://www.phytec.de/documents/l-814e-3-imx6-bsp-manual/

TFTP

- tftpimage
-
    - ip **192.168.3.11**tftp **192.168.3.10**
-
- barebox /mnt/tftp tabls
- barebox / Introducing barebox
- [xx]
    - barebox[barebox]
    - [zImage]
    - [oftree]
    - [rootfs]

---

bootloader

barebox

BSP 16.1.0 bareboxlog

```
barebox 2016.11.0-i.MX6-PD16.1.0 #1 Sat Jul 29 10:31:17 CST 2017


Board: Phytec phyCORE-i.MX6 Quad with NAND
detected i.MX6 Quad revision 1.5
mdio_bus: miibus0: probed
eth0: got preset MAC address: 50:2d:f4:0c:cb:91
nand: ONFI flash detected
nand: NAND device: Manufacturer ID: 0x01, Chip ID: 0xd3 (AMD/Spansion S34ML08G2), 1024MiB, page size: 2048, OOB
size: 128
Bad block table found at page 524224, version 0x01
Bad block table found at page 524160, version 0x01
m25p80 m25p80@00: n25q128a13 (16384 Kbytes)
imx-esdhc 2190000.usdhc: registered as 2190000.usdhc
da9063 da90620: da9062 with id 62.10.04.01 detected
netconsole: registered as netconsole-1
phySOM-i.MX6: Using environment in NAND flash
malloc space: 0x2ff7bf20 -> 0x4fef7e3f (size 511.5 MiB)
running /env/bin/init...

Hit m for menu or any other key to stop autoboot:  2

type exit to get to the menu
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

barebox

barebox barebox_update BSPbarebox

```
barebox_update -t nand /mnt/tftp/[barebox]
```

barebox log

```
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ barebox_update -t nand /mnt/tftp/barebox.bin
eth0: 1000Mbps full duplex link detected
T Image Metadata:
  build: #1 Mon Jan 23 15:19:09 CET 2017
  release: 2016.11.0-i.MX6-PD16.1.0
  parameter: memsize=1024
imx-bbu-nand-fcb: Firmware @ page 1152, size 269 pages has crc32: 0x6637d652
imx-bbu-nand-fcb: Firmware @ page 256, size 269 pages has crc32: 0x6637d652
imx-bbu-nand-fcb: Primary firmware is on pages 1152-1421, valid, clean
imx-bbu-nand-fcb: secondary firmware is on pages 256-525, valid, clean
imx-bbu-nand-fcb: ROM uses slot 1
update barebox from /mnt/tftp/barebox.bin using handler nand to nand0.barebox (y/n)?
updating barebox...
imx-bbu-nand-fcb: updating slot 0
imx-bbu-nand-fcb: writing firmware 0 to block 4 (ofs 0x00080000)
imx-bbu-nand-fcb: Writing FCB/DBBT on block 0
imx-bbu-nand-fcb: Writing FCB/DBBT on block 1
imx-bbu-nand-fcb: Writing FCB/DBBT on block 2
imx-bbu-nand-fcb: Writing FCB/DBBT on block 3
imx-bbu-nand-fcb: updating slot 1
imx-bbu-nand-fcb: writing firmware 1 to block 18 (ofs 0x00240000)
update succeeded
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

barebox

```
erase /dev/nand0.barebox-environment.bb
```

barebox env log

```
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ erase /dev/nand0.barebox-environment.bb
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

barebox

barebox

```
reset
```

resetbarebox

/dev

ls /dev

```
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ ls /dev
eeprom0                         full
imx-ocotp                       m25p0
m25p0.barebox                   m25p0.barebox-environment
m25p0.kernel                    m25p0.oftree
mdio0-phy03                     mem
nand0                           nand0.barebox
nand0.barebox-environment       nand0.barebox-environment.bb
nand0.barebox.bb                nand0.bb
nand0.oob                       nand0.raw
nand0.root                      nand0.root.bb
null                            ram0
zero
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

nandubi

```
ubiformat /dev/nand0.root -y
```

ubi log

```
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ ubiformat /dev/nand0.root
ubiformat: nand0.root (nand), size 1068498944 bytes (1019 MiB), 8152 eraseblocks of 131072 bytes (128 KiB),
min. I/O size 2048 bytes
libscan: scanning eraseblock 8151 -- 100 % complete
ubiformat: 8148 eraseblocks have valid erase counter, mean value is 12
ubiformat: 4 bad eraseblocks found, numbers: 8148, 8149, 8150, 8151
ubiformat: formatting eraseblock 8151 -- 100 % complete
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

ubiupdatevolubiformatubimkvol

```
ubiattach /dev/nand0.root
```

log

```
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ ubiattach /dev/nand0.root
ubi0: scanning is finished
ubi0: registering /dev/nand0.root.ubi
ubi0: attached mtd0 (name "nand0.root", size 1019 MiB) to ubi0
ubi0: PEB size: 131072 bytes (128 KiB), LEB size: 126976 bytes
ubi0: min./max. I/O unit sizes: 2048/2048, sub-page size 2048
ubi0: VID header offset: 2048 (aligned 2048), data offset: 4096
ubi0: good PEBs: 8148, bad PEBs: 4, corrupted PEBs: 0
ubi0: user volume: 0, internal volumes: 1, max. volumes count: 128
ubi0: max/mean erase counter: 40/13, WL threshold: 4096, image sequence number: 14055
ubi0: available PEBs: 7986, total reserved PEBs: 162, PEBs reserved for bad PEB handling: 156
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

/dev

ls /dev

```
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ ls /dev
eeprom0                         full
imx-ocotp                       m25p0
m25p0.barebox                   m25p0.barebox-environment
m25p0.kernel                    m25p0.oftree
mdio0-phy03                     mem
nand0                           nand0.barebox
nand0.barebox-environment       nand0.barebox-environment.bb
nand0.barebox.bb                nand0.bb
nand0.oob                       nand0.raw
nand0.root                      nand0.root.bb
nand0.root.ubi   <--      null
ram0                            zero
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

ubiformat

```
ubimkvol -t static /dev/nand0.root.ubi kernel 8M
```

log

```
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ ubimkvol -t static /dev/nand0.root.ubi kernel 8M
ubi0: registering kernel as /dev/nand0.root.ubi.kernel
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

```
ubimkvol -t static /dev/nand0.root.ubi oftree 1M
```

log

```
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ ubimkvol -t static /dev/nand0.root.ubi oftree 1M
ubi0: registering oftree as /dev/nand0.root.ubi.oftree
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

```
ubimkvol -t dynamic /dev/nand0.root.ubi root 0
```

log

```
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ ubimkvol -t dynamic /dev/nand0.root.ubi root 0
ubi0: registering root as /dev/nand0.root.ubi.root
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

/dev/

ls /dev

```
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ ls /dev
eeprom0                         full
imx-ocotp                       m25p0
m25p0.barebox                   m25p0.barebox-environment
m25p0.kernel                    m25p0.oftree
mdio0-phy03                     mem
nand0                           nand0.barebox
nand0.barebox-environment       nand0.barebox-environment.bb
nand0.barebox.bb                nand0.bb
nand0.oob                       nand0.raw
nand0.root                      nand0.root.bb
nand0.root.ubi                  nand0.root.ubi.kernel       <-- 3
nand0.root.ubi.oftree           nand0.root.ubi.root
null                            ram0
zero
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

kernelnand

```
ubiupdatevol /dev/nand0.root.ubi.kernel /mnt/tftp/[zImage]
```

kernel log

```
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ ubiupdatevol /dev/nand0.root.ubi.kernel /mnt/tftp/zImage-phyboard-
mira-imx6-3.bin
eth0: 1000Mbps full duplex link detected
T barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

nand

```
ubiupdatevol /dev/nand0.root.ubi.oftree /mnt/tftp/[oftree]
```

log

```
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ ubiupdatevol /dev/nand0.root.ubi.oftree /mnt/tftp/zImage-imx6q-
phytec-mira-rdk-nand.dtb
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

nand

```
cp -v /mnt/tftp/[rootfs] /dev/nand0.root.ubi.root
```

log

```
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ cp -v /mnt/tftp/phytec-qt5demo-image-phyboard-mira-imx6-3.ubifs
/dev/nand0.root.ubi.root
        [####################################################################]
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

OK

```
reset
```

SD

1barebox\SDSD

2TFTPtftpSD

```
/mnt/tftp/[barebox]    -->    /mnt/mmc/[barebox]
/mnt/tftp/[zImage]     -->    /mnt/mmc/[zImage]
/mnt/tftp/[oftree]     -->    /mnt/mmc/[oftree]
/mnt/tftp/[rootfs]     -->    /mnt/mmc/[rootfs]
```

barebox

```
ubiattach /dev/nand0.root
```

ubiattach log

```
Hit m for menu or any other key to stop autoboot:  3

type exit to get to the menu
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ ubiattach /dev/nand0.root
ubi0: attached by fastmap
ubi0: fastmap pool size: 256
ubi0: fastmap WL pool size: 128
ubi0: registering /dev/nand0.root.ubi
ubi0: registering kernel as /dev/nand0.root.ubi.kernel
ubi0: registering oftree as /dev/nand0.root.ubi.oftree
ubi0: registering root as /dev/nand0.root.ubi.root
ubi0: attached mtd0 (name "nand0.root", size 1019 MiB) to ubi0
ubi0: PEB size: 131072 bytes (128 KiB), LEB size: 126976 bytes
ubi0: min./max. I/O unit sizes: 2048/2048, sub-page size 2048
ubi0: VID header offset: 2048 (aligned 2048), data offset: 4096
ubi0: good PEBs: 8148, bad PEBs: 4, corrupted PEBs: 0
ubi0: user volume: 3, internal volumes: 1, max. volumes count: 128
ubi0: max/mean erase counter: 41/13, WL threshold: 4096, image sequence number: 14055
ubi0: available PEBs: 0, total reserved PEBs: 8148, PEBs reserved for bad PEB handling: 156
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/ ls /dev
eeprom0                         full
imx-ocotp                       m25p0
m25p0.barebox                   m25p0.barebox-environment
m25p0.kernel                    m25p0.oftree
mdio0-phy03                     mem
nand0                           nand0.barebox
nand0.barebox-environment       nand0.barebox-environment.bb
nand0.barebox.bb                nand0.bb
nand0.oob                       nand0.raw
nand0.root                      nand0.root.bb
nand0.root.ubi                  nand0.root.ubi.kernel
nand0.root.ubi.oftree           nand0.root.ubi.root
null                            ram0
zero
barebox@Phytec phyCORE-i.MX6 Quad with NAND:/
```

ubiupdatevol

TODO

-
- Barebox
  - ip
  -

    - barebox
- bsp manual