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NFS root での起動

PC上に開発環境を導入したクロス root filesystem(ARM用) を用意し、PCでコンパイルしたプログラムを
実機で即¹⁾確認したい場合などには、NFS rootでの起動が便利です。

『ブートデバイスの選択およびコンソールの切替 (DIPSW 設定)』による方法では選択できませんが、
bootloader のメニューから選択し、起動することができます。

サーバ側の設定

NFSサーバ、DHCPサーバを導入し、設定を行います。

NFSサーバの設定

NFS root のファイルシステムを提供するサーバの設定を行います。

“/home/exports/ARM_trusty” というディレクトリを提供する場合の例です。
NFS-serverをインストールし、/etc/exports に下記のようなエントリを追加します。

exports

```
/home/exports/ARM_trusty  
192.168.253.0/255.255.255.0(rw,no_root_squash,insecure,async,subtree_ch  
eck)
```

追加したエントリを有効化します。

```
# exportfs -a
```

export されているか確認しておきます。

```
# exportfs |grep trusty  
/home/exports/ARM_trusty
```

DHCPサーバの設定

ISC DHCP の例です。

/etc/dhcp/dhcpd.conf を設定します。

dhcpd.conf

```
default-lease-time 86400;
max-lease-time 86400;
allow bootp;
#ddns-update-style ad-hoc;

subnet 192.168.253.0 netmask 255.255.255.0 {
    option subnet-mask 255.255.255.0;
    option broadcast-address 192.168.253.255;
    option routers 192.168.253.5;
    option ntp-servers 192.168.253.5;
    option domain-name-servers 192.168.253.5;

    range 192.168.253.200 192.168.253.249;

    group {
        host mae3xx {
            hardware ethernet 00:80:6d:xx:xx:xx;
            fixed-address 192.168.253.47;
            option root-path "192.168.253.5:/home/exports/ARM_trusty";
        }
    }
}
```

NFS root での起動

MA-E3xx のコンソールで、起動時にキーを入力し自動起動を停止させます。

```
barebox 2013.12.0-gc51c3f4 #3 Tue Mar 11 18:24:49 JST 2014
```

```
Board: plum-ma[512MiB]
m25p80 m25p800: m25p16 (2048 Kbytes)
booting from SPI
```

```
barebox 2013.12.0-00373-g5307ee1-dirty #706 Tue Jan 12 10:16:15 JST 2016
```

```
Board: plum-ma[512MiB]
nand: ONFI param page 0 valid
nand: ONFI flash detected
nand: NAND device: Manufacturer ID: 0x01, Chip ID: 0xda (AMD/Spansion
```

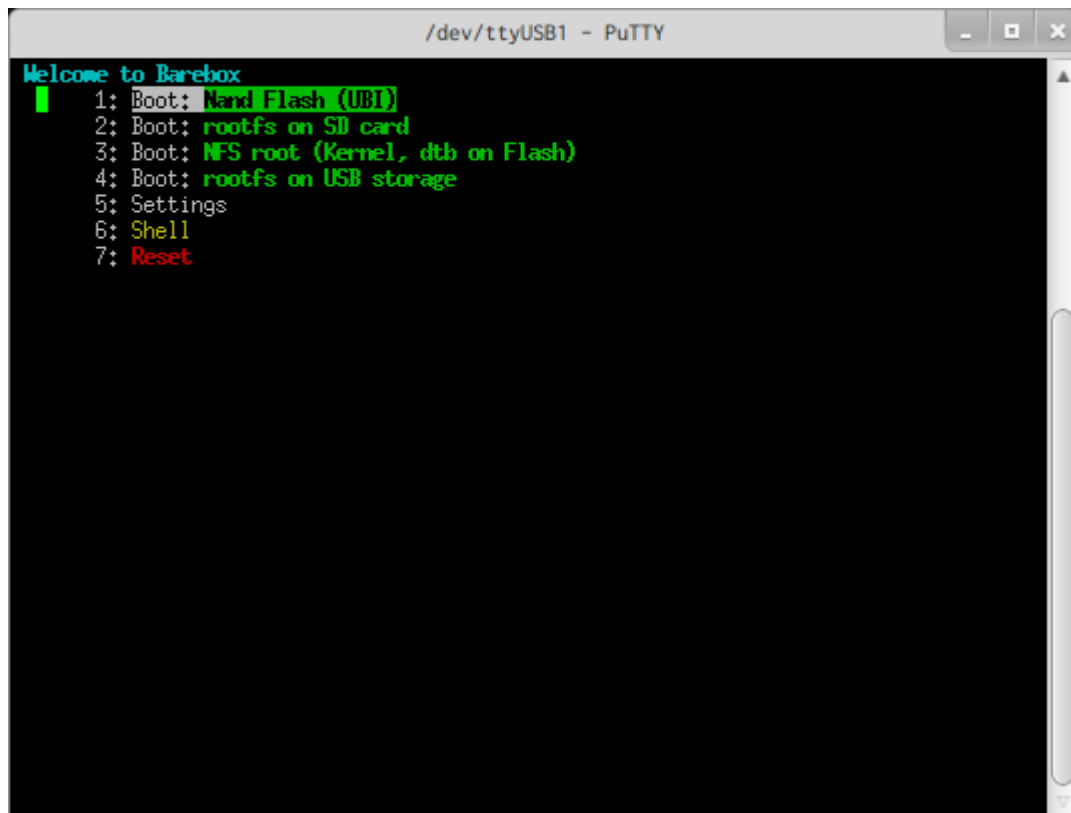
```
S34ML02G1), 256MiB, page size: 2048, 00B
size: 64
omap-hsmmc omap4-hsmmc0: registered as omap4-hsmmc0
m25p80 m25p800: m25p16 (2048 Kbytes)
i2c-omap i2c-am33xx0: bus 0 rev0.11 at 100 kHz
cpsw cpsw0: detected phy mask 0xc
mdio_bus: miibus0: probed
eth0: got preset MAC address: D0:39:72:3D:75:08
malloc space: 0x8e000000 -> 0x9dffffff (size 256 MiB)
Reset is caused by "PowerOnReset" (0x00000001).
envfs: wrong magic on /dev/env0
no valid environment found on /dev/env0. Using default environment
running /env/bin/init...
filetype: No such file or directory
UBI: attaching mtd0 to ubi0
UBI: scanning is finished
registering /dev/ubi0
registering kernel.0 as /dev/ubi0.kernel.0
registering kernel.1 as /dev/ubi0.kernel.1
registering initramfs.0 as /dev/ubi0.initramfs.0
registering initramfs.1 as /dev/ubi0.initramfs.1
registering kmod.0 as /dev/ubi0.kmod.0
registering kmod.1 as /dev/ubi0.kmod.1
registering rootfs.0 as /dev/ubi0.rootfs.0
registering rootfs.1 as /dev/ubi0.rootfs.1
registering opt as /dev/ubi0.opt
registering overlay as /dev/ubi0.overlay
UBI: attached mtd0 (name "nand0.UBI", size 255 MiB) to ubi0
UBI: PEB size: 131072 bytes (128 KiB), LEB size: 129024 bytes
UBI: min./max. I/O unit sizes: 2048/2048, sub-page size 512
UBI: VID header offset: 512 (aligned 512), data offset: 2048
UBI: good PEBs: 2040, bad PEBs: 0, corrupted PEBs: 0
UBI: user volume: 10, internal volumes: 1, max. volumes count: 128
UBI: max/mean erase counter: 9/6, WL threshold: 4096, image sequence number:
4024
UBI: available PEBs: 0, total reserved PEBs: 2040, PEBs reserved for bad PEB
handling: 40

Hit m for menu or any other key to stop autoboot: 1

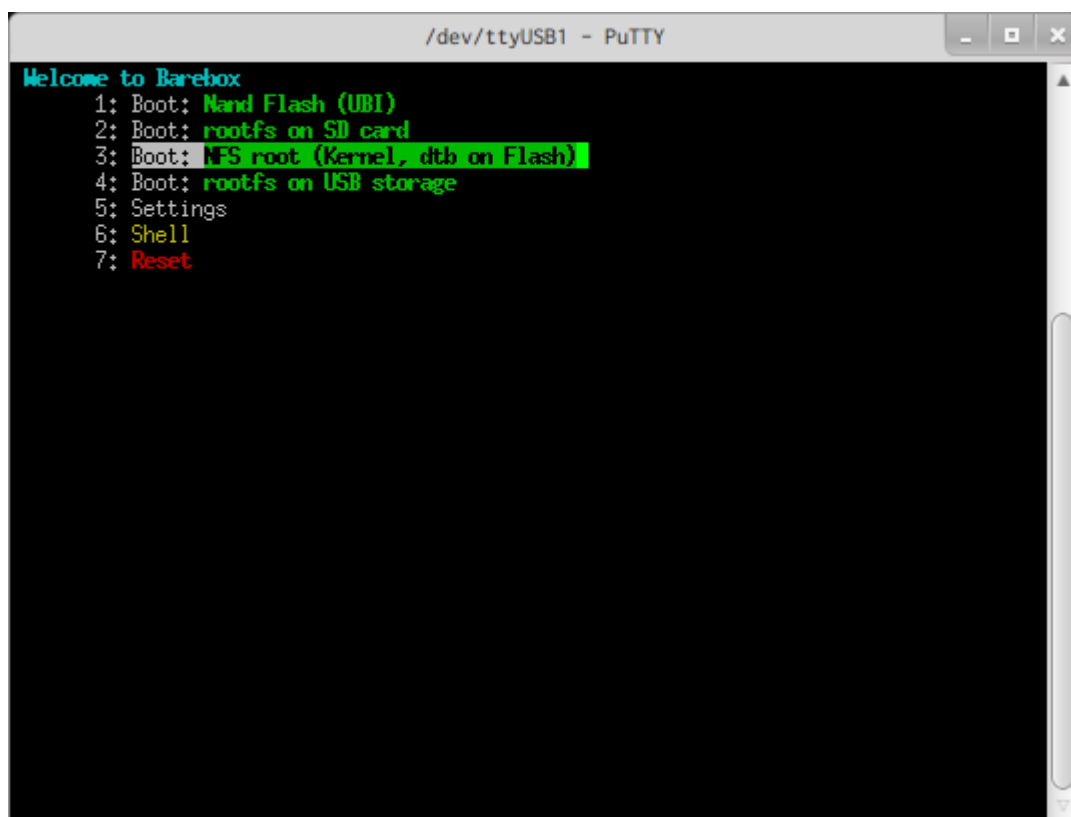
type exit to get to the menu
barebox@plum-ma[512MiB]:/
```

“exit” と入力することで [bootloader のメニューを表示させます。

```
type exit to get to the menu
barebox@plum-ma[512MiB]:/ exit
```



カーソルの上下で “3: Boot: NFS root (Kernel, dtb on Flash)” を選択し、Enter で実行します。



起動しました。

```
/dev/ttyUSB1 - PuTTY
[  9.278814] usb 2-1: GSM modem (1-port) converter now attached to ttyUSB0
IP-Config: eth0 hardware address 00:80:6d:8d:29:10 mtu 1500 DHCP RARP
IP-Config: eth0 complete (dhcp from 192.168.253.5):
address: 192.168.253.47 broadcast: 192.168.253.255 netmask: 255.255.255.0
gateway: 192.168.253.5 dns0 : 192.168.253.5 dns1 : 0.0.0.0
rootserver: 192.168.253.4 rootpath: 192.168.253.5:/home/exports/ARM_trusty_base
filename : uImage,MAE2xx,3262
Begin: Running /scripts/nfs-premount ... done.
Begin: Running /scripts/nfs-bottom ... done.
done.
Begin: Running /scripts/init-bottom ... done.
[ 10.301569] random: init urandom read with 39 bits of entropy available
[ 10.530483] init: ureadahead main process (165) terminated with status 5
[ 10.843973] init: mounted-proc main process (175) terminated with status 1
* Initializing random number generator... [ OK ]
* Loading cpufreq kernel modules... [ OK ]
* Starting DNS forwarder and DHCP server dnsmasq [ OK ]
* CPUFreq Utilities: Setting ondemand CPUFreq governor... * CPU
0... [ OK ]
* inadyn: Not starting. Disabled in /etc/default/inadyn
* Starting nginx nginx [ OK ]
* Starting NTP server ntpd [ OK ]
* Restoring resolver state... [ OK ]
boot history area not found.
* Running local boot scripts (/etc/rc.local) [ OK ]

Ubuntu Trusty Tahr (development branch) plum tty00
plum login: █
```

1)

プログラムを転送せずに

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