```
/*
 * File:         Documentation/blackfin/Filesystems
 * Based on:
 * Author:
 *
 * Created:
 * Description:  This file contains the simple DMA Implementation for Blackfin
 *
 * Rev:          $Id: Filesystems 2384 2006-11-01 04:12:43Z magicyang $
 *
 * Modified:
 *               Copyright 2004-2006 Analog Devices Inc.
 *
 * Bugs:         Enter bugs at http://blackfin.uclinux.org/
 *
 */
```

How to mount the root file system in uClinux/Blackfin

1 Mounting EXT3 File system.

Creating an EXT3 File system for uClinux/Blackfin:

Please follow the steps to form the EXT3 File system and mount the same as root file system.

a Make an ext3 file system as large as you want the final root file system.

```
mkfs.ext3  /dev/ram0 <your-rootfs-size-in-1k-blocks>
```

b Mount this Empty file system on a free directory as:

```
mount -t ext3 /dev/ram0  ./test
        where ./test is the empty directory.
```

c Copy your root fs directory that you have so carefully made over.

```
cp -af  /tmp/my_final_rootfs_files/* ./test

(For ex: cp -af uClinux-dist/romfs/* ./test)
```

d If you have done everything right till now you should be able to see the required "root" dir's (that's etc, root, bin, lib, sbin...)

e Now unmount the file system

```
umount  ./test
```

f Create the root file system image.

```
dd if=/dev/ram0 bs=1k count=<your-rootfs-size-in-1k-blocks> \
> ext3fs.img
```

Now you have to tell the kernel that will be mounting this file system as rootfs.
So do a make menuconfig under kernel and select the Ext3 journaling file system support under File system --> submenu.

2. Mounting EXT2 File system.

By default the ext2 file system image will be created if you invoke make from the top uClinux-dist directory.

3. Mounting CRAMFS File System

To create a CRAMFS file system image execute the command

```
mkfs.cramfs ./test cramfs.img
```

where ./test is the target directory.

4. Mounting ROMFS File System

To create a ROMFS file system image execute the command

```
genromfs -v -V "ROMdisk" -f romfs.img -d ./test
```

where ./test is the target directory

5. Mounting the JFFS2 Filesystem

To create a compressed JFFS filesystem (JFFS2), please execute the command

```
mkfs.jffs2 -d ./test -o jffs2.img
```

where ./test is the target directory.

However, please make sure the following is in your kernel config.

```
/*
 * RAM/ROM/Flash chip drivers
 */
#define CONFIG_MTD_CFI 1
#define CONFIG_MTD_ROM 1
/*
 * Mapping drivers for chip access
 */
#define CONFIG_MTD_COMPLEX_MAPPINGS 1
#define CONFIG_MTD_BF533 1
```

```
#undef CONFIG_MTD_UCLINUX
```

Through the u-boot boot loader, use the jffs2.img in the corresponding partition made in linux-2.6.x/drivers/mtd/maps/bf533_flash.c.

NOTE - Currently the Flash driver is available only for EZKIT. Watch out for a STAMP driver soon.

6. Mounting the NFS File system

For mounting the NFS please do the following in the kernel config.

In Networking Support --> Networking options --> TCP/IP networking -->
IP: kernel level autoconfiguration

Enable BOOTP Support.

In Kernel hacking --> Compiled-in kernel boot parameter add the following

```
root=/dev/nfs rw ip=bootp
```

In File system --> Network File system, Enable

```
NFS file system support --> NFSv3 client support
Root File system on NFS
```

in uClibc menuconfig, do the following
In Networking Support
enable Remote Procedure Call (RPC) support
Full RPC Support

On the Host side, ensure that /etc/dhcpd.conf looks something like this

```
ddns-update-style ad-hoc;
allow bootp;
subnet 10.100.4.0 netmask 255.255.255.0 {
default-lease-time 122209600;
max-lease-time 31557600;
group {
        host bf533 {
                hardware ethernet 00:CF:52:49:C3:01;
                fixed-address 10.100.4.50;
                option root-path "/home/nfsmount";
        }
}
```

ensure that /etc/exports looks something like this

```
/home/nfsmount *(rw,no_root_squash,no_all_squash)
```

run the following commands as root (may differ depending on your distribution) :

- service nfs start
- service portmap start

- service dhcpd start
- /usr/sbin/exportfs