

## Can I load the ulmage manually using u-boot?

Written by Administrator

Wednesday, 17 February 2010 22:17 - Last revised Wednesday, 17 February 2010

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Yes you can. The procedure is described below taking the BR4 Appliance hardware target as an example

After you have compiled the Switchfin you will get ulmage-br4 file in *{switchfin root}/build\_br4/image\_br4/* folder

Copy this file in the root directory of your tftp server available in your network. If you don't have tftp server you will need to configure one.

Now, boot your BR4 and hit any key during the countdown sequence to get to the uboot prompt  
BR4>

Let's adjust the BR4 IP address so it matches your network. In our case 192.168.1.x  
*br4> setenv ipaddr 192.168.1.5*

Let's adjust the tftp server IP as well  
*br4> setenv serverip 192.168.1.2*

Now we can download the image from the tftp server into the address location 0x2000000 in sdram

```
br4> tftp 0x2000000 ulmage-br4
Using DP83848 PHY device
TFTP from server 192.168.1.2; our IP address is 192.168.1.100
Filename 'ulmage-br4'.
Load address: 0x2000000
Loading: #####
#####
#####
done
Bytes transferred = 8126464 (7c0000 hex)
br4>
```

The next step is to clean your nand flash. With the current version of u-boot we know that the best is to invoke the following two commands:

```
br4> nand erase clean
br4> nand erase
```

And finally you can record your 0x7c0000 bytes big image from the address 0x2000000 into the beginning of the nand flash

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```
br4> nand write 0x2000000 0 0x7c0000
```

After you reboot BR4 Appliance you should get boot log similar as the one shown below

*icache\_enable*

*U-Boot 1.1.6-svn (astfin.org) (Oct 19 2009 - 19:43:15)*

*CPU: ADSP BF537 Rev.: 0.3*

*Board: BR4-Appliance*

*SW-Reset already high (Button released)*

*Proceeding to normal boot sequence...*

*Clock: VCO: 600 MHz, Core: 600 MHz, System: 120 MHz*

*SDRAM: 64 MB*

*In: serial*

*Out: serial*

*Err: serial*

*NAND: 256 MiB*

*Net: DP83848 PHY*

*I2C: ready*

*Hit any key to stop autoboot: 0*

*NAND read: device 0 offset 0x0, size 0xa00000*

*Reading data from 0x9ff800 -- 100% complete.*

*10485760 bytes read: OK*

*Status: 1*

*## Booting image at 02000000 ...*

*Status: 2*

*Status: 3*

*Image Name: Linux Kernel and ext2*

*Created: 2010-02-08 22:38:58 UTC*

*Image Type: Blackfin Linux Kernel Image (gzip compressed)*

*Data Size: 8052432 Bytes = 7.7 MB*

*Load Address: 00001000*

*Entry Point: 001bd1e4*

*Verifying Checksum ... OK*

*Status: 4*

*Status: 5*

*Status: 6*

*Uncompressing Kernel Image ... OK*

*Status: 7*

*Status: 8*

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Starting Kernel at = 1bd1e4

Linux version 2.6.28.10-ADI-2009R1astfin (root@dpn) (gcc version 4.1.2 (ADI svn)) #2 Tue Feb 9 00:38:06 EET 2010

Board Memory: 64MB

Kernel Managed Memory: 64MB

Memory map:

fixedcode = 0x00000400-0x00000490

text[] = 0x00001000-0x0013adb0

rodata[] = 0x0013adb0-0x001911f4

bss[] = 0x00192000-0x001a426c

data[] = 0x001a426c-0x001b6000

stack[] = 0x001b4000-0x001b6000

init[] = 0x001b6000-0x001cf000

available = 0x001cf000-0x02b00000

rootfs[] = 0x02b00000-0x03f00000

DMA Zone[] = 0x03f00000-0x04000000

Hardware Trace Active and Enabled

Boot Mode: 3

Blackfin support (C) 2004-2009 Analog Devices, Inc.

Compiled for ADSP-BF537 Rev 0.3

Blackfin Linux support by <http://blackfin.uclinux.org/>

Processor Speed: 600 MHz core clock and 120 MHz System Clock

NOMPU: setting up cplb tables

Instruction Cache Enabled for CPU0

Data Cache Enabled for CPU0 (write-back)

Built 1 zonelists in Zone order, mobility grouping off. Total pages: 10922

Kernel command line: root=/dev/mtdblock0 rw console=ttyBF0,115200 factory\_default=0

hard\_default=0 ip=192.168.1.100:192.168.1.2:192.168.1.1:255.255.255.0:BR4:eth0:off

Configuring Blackfin Priority Driven Interrupts

PID hash table entries: 256 (order: 8, 1024 bytes)

bfin-rtc: invalid date; resetting

console [ttyBF0] enabled

Dentry cache hash table entries: 8192 (order: 3, 32768 bytes)

Inode-cache hash table entries: 4096 (order: 2, 16384 bytes)

Memory available: 41612k/65536k RAM, (100k init code, 1255k kernel code, 493k data, 1024k dma, 572k reserved)

Calibrating delay loop... 1196.03 BogoMIPS (lpj=2392064)

Security Framework initialized

Mount-cache hash table entries: 512

Blackfin Scratchpad data SRAM: 4 KB

Blackfin L1 Data A SRAM: 16 KB (15 KB free)

Blackfin L1 Data B SRAM: 16 KB (16 KB free)

Blackfin L1 Instruction SRAM: 48 KB (36 KB free)

net\_namespace: 288 bytes

NET: Registered protocol family 16

Blackfin DMA Controller

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```
br4_appliance_init(): chip_id=327C80CB,dspid=E5040003
br4_appliance_init(): registering device resources
NET: Registered protocol family 2
IP route cache hash table entries: 1024 (order: 0, 4096 bytes)
TCP established hash table entries: 2048 (order: 2, 16384 bytes)
TCP bind hash table entries: 2048 (order: 1, 8192 bytes)
TCP: Hash tables configured (established 2048 bind 2048)
TCP reno registered
NET: Registered protocol family 1
msgmni has been set to 81
io scheduler noop registered
io scheduler anticipatory registered (default)
io scheduler cfq registered
Serial: Blackfin serial driver
bfin-uart.1: ttyBF0 at MMIO 0xffc00400 (irq = 18) is a BFIN-UART
brd: module loaded
tun: Universal TUN/TAP device driver, 1.6
tun: (C) 1999-2004 Max Krasnyansky <maxk@qualcomm.com>
bfin_mii_bus: probed
bfin_mac: attached PHY driver [Generic PHY] (mii_bus:phy_addr=0:01, irq=-1,
mdc_clk=2500000Hz(mdc_div=23)@sclk=120MHz)
bfin_mac bfin_mac.0: Blackfin on-chip Ethernet MAC driver, Version 1.1
uclinux[mtd]: RAM probe address=0x2b00000 size=0x1400000
Creating 1 MTD partitions on "RAM":
0x00000000-0x01400000 : "ROMfs"
Generic platform RAM MTD, (c) 2004 Simtec Electronics
NAND device: Manufacturer ID: 0xec, Chip ID: 0xda (Samsung NAND 256MiB 3,3V 8-bit)
Scanning device for bad blocks
Bad eraseblock 1539 at 0x0c060000
Creating 3 MTD partitions on "NAND 256MiB 3,3V 8-bit":
0x00000000-0x00a00000 : "ulmage"
0x00a00000-0x01400000 : "ulmage backup"
0x01400000-0x10000000 : "persistent file system"
m25p80 spi0.1: found m25p40, expected m25p64
bfin-spi bfin-spi.0: Blackfin on-chip SPI Controller Driver, Version 1.0, regs_base@ffc00500,
dma channel@7
rtc-bfin rtc-bfin: rtc core: registered rtc-bfin as rtc0
i2c-bfin-twi i2c-bfin-twi.0: Blackfin BF5xx on-chip I2C TWI Contoller, regs_base@ffc01400
In pca9539_probe => 0
bfin-wdt: initialized: timeout=20 sec (nowayout=0)
TCP cubic registered
NET: Registered protocol family 17
802.1Q VLAN Support v1.8 Ben Greear <greearb@candelatech.com>
All bugs added by David S. Miller <davem@redhat.com>
rtc-bfin rtc-bfin: setting system clock to 1970-01-01 00:00:01 UTC (1)
IP-Config: Complete:
```

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```
device=eth0, addr=192.168.1.100, mask=255.255.255.0, gw=192.168.1.1,
host=BR4, domain=, nis-domain=(none),
bootserver=192.168.1.2, rootserver=192.168.1.2, rootpath=
VFS: Mounted root (ext2 filesystem).
Freeing unused kernel memory: 100k freed
dma_alloc_init: dma_page @ 0x02ab3000 - 256 pages at 0x03f00000
UBI: attaching mtd3 to ubi0
UBI: physical eraseblock size: 131072 bytes (128 KiB)
UBI: logical eraseblock size: 129024 bytes
UBI: smallest flash I/O unit: 2048
UBI: sub-page size: 512
UBI: VID header offset: 512 (aligned 512)
UBI: data offset: 2048
UBI: empty MTD device detected
UBI: create volume table (copy #1)
UBI: create volume table (copy #2)
UBI: attached mtd3 to ubi0
UBI: MTD device name: "persistent file system"
UBI: MTD device size: 236 MiB
UBI: number of good PEBs: 1887
UBI: number of bad PEBs: 1
UBI: max. allowed volumes: 128
UBI: wear-leveling threshold: 4096
UBI: number of internal volumes: 1
UBI: number of user volumes: 0
UBI: available PEBs: 1865
UBI: total number of reserved PEBs: 22
UBI: number of PEBs reserved for bad PEB handling: 18
UBI: max/mean erase counter: 0/0
UBI: background thread "ubi_bgt0d" started, PID 150
UBI device number 0, total 1887 LEBs (243468288 bytes, 232.2 MiB), available 1865 LEBs
(240629760 bytes, 229.5 MiB), LEB size 129024 bytes (126.0 KiB)
ete.PHY: 0:01 - Link is Up00 - 100/Fullmpete.
Erasing 128 Kibyte @ ac40000 -- 72 % complete.ete.
Skipping bad block at 0x0ac60000
0000ing 128 Kibyte @ e5e0000 -- 97 UBIFS: default file-system created6
Erasing 128 Kibyte @ e8a0000 -- 98 %UBIFS: mounted UBI device 0, volume 0, name
"persistent".
compngUBIFS: file system size: 239210496 bytes (233604 KiB, 228 MiB, 1854 LEBs)%
e94UBIFS: journal size: 11999232 bytes (11718 KiB, 11 MiB, 93 LEBs)
000 000UBIFS: media format: 4 (latest is 4)6
@ e9- 98UBIFS: default compressor: LZOe
98 0UBIFS: reserved for root: 5182151 bytes (5060 KiB)-
Erasing 128 Kibyte @ ec00000 -- 100 % complete.
ubiattach: error!: cannot attach mtd3
error 17 (File exists)
```

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*Set volume size to 240629760*

*Volume ID 0, size 1865 LEBs (240629760 bytes, 229.5 MiB), LEB size 129024 bytes (126.0 KiB), dynamic, name "persistent", alignment 1*

*Checking for upload image to program*

*modprobe: module restore not found*

*Can not find persistent configuration files*

*We are going to unpack default configuration!!!*

*persistent/*

*persistent/var/*

*persistent/var/log/*

*persistent/var/log/asterisk/*

*persistent/var/log/asterisk/cdr-csv/*

*persistent/var/lib/*

*persistent/var/lib/asterisk/*

*persistent/var/lib/asterisk/agi-bin/*

*persistent/var/lib/asterisk/agi-bin/ip.sh*

*persistent/var/lib/asterisk/firmware/*

*persistent/var/lib/asterisk/firmware/iax/*

*persistent/var/lib/asterisk/gui\_backups/*

*persistent/tftpboot/*

*persistent/usr/*

*persistent/usr/share/*

*persistent/usr/share/zoneinfo/*

*persistent/usr/share/zoneinfo/ChST-10*

*persistent/usr/share/zoneinfo/MAGT-11MAGST*

*persistent/usr/share/zoneinfo/EST5EDT*

*persistent/usr/share/zoneinfo/GMT0BST*

*persistent/usr/share/zoneinfo/AZOT1AZOST*

*persistent/usr/share/zoneinfo/EET-2EEST*

*persistent/usr/share/zoneinfo/PST8PDT*

*persistent/usr/share/zoneinfo/IRDT*

*persistent/usr/share/zoneinfo/CET-1CEST*

*persistent/usr/share/zoneinfo/WST-8*

*persistent/usr/share/zoneinfo/MST7MDT*

*persistent/usr/share/zoneinfo/NZST-12NZDT*

*persistent/usr/share/zoneinfo/ICT-7*

*persistent/usr/share/zoneinfo/NST3:30NDT*

*persistent/usr/share/zoneinfo/PKT-5*

*persistent/usr/share/zoneinfo/SST11*

*persistent/usr/share/zoneinfo/CST-9:30CST*

*persistent/usr/share/zoneinfo/GMT-3*

*persistent/usr/share/zoneinfo/IST-5:30*

*persistent/usr/share/zoneinfo/AFT-4:30*

*persistent/usr/share/zoneinfo/HST10*

*persistent/usr/share/zoneinfo/CST6CDT*

*persistent/usr/share/zoneinfo/GST-4*

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*persistent/usr/share/zoneinfo/GMT-2*  
*persistent/usr/share/zoneinfo/BDT-6*  
*persistent/usr/share/zoneinfo/NRT-12*  
*persistent/usr/share/zoneinfo/AST-3*  
*persistent/usr/share/zoneinfo/JST-9*  
*persistent/usr/share/zoneinfo/AST4ADT*  
*persistent/etc/*  
*persistent/etc/checkgateway.sh*  
*persistent/etc/ntp/*  
*persistent/etc/rc.d/*  
*persistent/etc/rc.d/S50asterisk*  
*persistent/etc/rc.d/S10network*  
*persistent/etc/rc.d/S55vlan*  
*persistent/etc/rc.d/S30ntp*  
*persistent/etc/rc.d/S39lec*  
*persistent/etc/rc.d/S35cron*  
*persistent/etc/rc.d/S40misdn*  
*persistent/etc/archive.sh*  
*persistent/etc/parse.sh*  
*persistent/etc/misdn-init.conf*  
*persistent/etc/init.d/*  
*persistent/etc/init.d/ntp*  
*persistent/etc/init.d/dhcpd*  
*persistent/etc/init.d/asterisk*  
*persistent/etc/init.d/lec*  
*persistent/etc/init.d/vlan*  
*persistent/etc/init.d/network*  
*persistent/etc/init.d/misdn*  
*persistent/etc/init.d/cron*  
*persistent/etc/rcparse.sh*  
*persistent/etc/rotatecdr.sh*  
*persistent/etc/asterisk/*  
*persistent/etc/asterisk/sip\_notify.conf*  
*persistent/etc/asterisk/networking.conf*  
*persistent/etc/asterisk/extconfig.conf*  
*persistent/etc/asterisk/rc\_org.conf*  
*persistent/etc/asterisk/extensions.conf*  
*persistent/etc/asterisk/enum.conf*  
*persistent/etc/asterisk/tools/*  
*persistent/etc/asterisk/tools/sysinfo*  
*persistent/etc/asterisk/iaxprov.conf*  
*persistent/etc/asterisk/voicemail.conf*  
*persistent/etc/asterisk/agents.conf*  
*persistent/etc/asterisk/dnsmgr.conf*  
*persistent/etc/asterisk/providers.conf*  
*persistent/etc/asterisk/cdr\_custom.conf*

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*persistent/etc/asterisk/misdn.conf*  
*persistent/etc/asterisk/modules.conf*  
*persistent/etc/asterisk/http.conf*  
*persistent/etc/asterisk/br4.conf*  
*persistent/etc/asterisk/sip.conf*  
*persistent/etc/asterisk/dundi.conf*  
*persistent/etc/asterisk/logger.conf*  
*persistent/etc/asterisk/musiconhold.conf*  
*persistent/etc/asterisk/asterisk.conf*  
*persistent/etc/asterisk/privacy.conf*  
*persistent/etc/asterisk/queues.conf*  
*persistent/etc/asterisk/followme.conf*  
*persistent/etc/asterisk/cdr.conf*  
*persistent/etc/asterisk/manager.conf*  
*persistent/etc/asterisk/indications.conf*  
*persistent/etc/asterisk/zapscan.conf*  
*persistent/etc/asterisk/gui\_confighw.conf*  
*persistent/etc/asterisk/reset\_config*  
*persistent/etc/asterisk/features.conf*  
*persistent/etc/asterisk/meetme.conf*  
*persistent/etc/asterisk/guipreferences.conf*  
*persistent/etc/asterisk/adsip.conf*  
*persistent/etc/asterisk/rtp.conf*  
*persistent/etc/asterisk/codecs.conf*  
*persistent/etc/asterisk/ooh323.conf.sample*  
*persistent/etc/asterisk/cdr\_manager.conf*  
*persistent/etc/asterisk/iax.conf*  
*persistent/etc/asterisk/extensions.ael*  
*persistent/etc/asterisk/users.conf*  
*persistent/etc/udhcpd.conf*  
*persistent/etc/passwd*  
*persistent/etc/config/*  
*persistent/etc/config/crontab*  
*persistent/etc/ntp.conf*  
*persistent/etc/asterisk.sh*  
*persistent/etc/fw\_env.config*  
*persistent/etc/network.sh*  
*persistent/etc/vlan.sh*  
*persistent/etc/ssmtp/*  
*persistent/etc/ssmtp/ssmtp.conf*  
*persistent/etc/HOSTNAME*  
*persistent/etc/cleanps.sh*  
*persistent/etc/network.conf*  
*persistent/sounds/*  
*persistent/sounds/if-u-know-ext-dial.gsm*  
*persistent/sounds/otherwise.gsm*



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```
persistent/sounds/to-reach-operator.gsm
persistent/sounds/pls-hold-while-try.gsm
persistent/sounds/thank-you-for-calling.gsm
modprobe: module spi_mmc not found
mount: mounting /dev/mmc on /mnt/sd failed: No such device or address
can't load spi_mmc module!!!
modprobe: module spi_mmc not found
SIOCADDRT: File exists
Thu Jan  1 00:00:17 UTC 1970
 1 Jan 00:00:21 ntpdate[228]: step time server 89.25.11.9 offset 1266444960.024576 sec
zarlink_LEC_chip: not present.
modprobe: failed to load module ec_module: Operation not permitted
Zapata Telephony Interface Registered on major 196
Zaptel Version: 1.4.10.1
Zaptel Echo Cancellor: MG2
BFSI TLG Driver ($Id: bfsi_tlg.c 1049 2008-03-28 10:34:09Z diego $). PCM slots:8
iRxBuffer1 = 0xff803f18 - size 2 * 8 * 8 = 128B
iTxBuffer1 = 0xff900320 - size 2 * 8 * 8 = 128B
ISR installed OK
Modular ISDN Stack core version (1_2_0) revision ($Revision: 1.40 $)
ISDN L1 driver version 1.20
ISDN L2 driver version 1.32
mISDN: DSS1 Rev. 1.47
XHFC: xhfc_init driver Rev. ??? (debug=0)
xhfc_init: missing ZL38065 echo canceller module!
xhfc_spi_probe: entered
SPI CS bit: 5 enabled
toggle reset
set reset to PF14
spi_xhfc_count: Found XHFC-4SU @ SPI address 0
xhfc_spi_probe: 1 device found
  xhfc_spi_probe: xhfc[0].pcm_config = 0xd000000
XHFC_PI0 xhfc_spi_probe: adapter(0) 'XHFC:SPI' found on SPI bus
XHFC: 1 card installed
VLAN not configured!
```