

## Mini2440 Linux Installation from a Windows Host with DNW Industrial ARMWorks [www.andahammer.com](http://www.andahammer.com)

**Note:** You may need to install a USB driver on your PC host first.

Set the boot mode slide switch to "Nor Flash". Set the boot mode back to "Nand Flash" after Linux installation.

The Linux binary images are in the **image/Linux** folder.

What you will do:

Set up DNW with both serial and USB.

- (1) Partition the NAND Flash.
- (2) Install the Bootloader
- (3) Install the Kernel
- (4) Install the File System

Connect serial and USB cables. Launch DNW. This is an executable and does not need to be installed. DNW will show serial RS232 and USB communication at the same time.

The DNW Configuration menu has one item called Options. Set Baud rate to 115200 if you don't know your COM port number, experiment. Use the Connect item in the Serial Port menu after turning on the Mini2440 power. There should be a legend at the top of the DNW window that says [COMx,115200bps][USB:OK]. The USB port can also be changed under the Configuration menu.

### Make Partition

**Caution:** Make partition will erase all user data on the **Nand Flash**.

- (1) Use the reset switch on the side of the Mini2440. You should get this list of BIOS options.

```
##### FriendlyARM BIOS for 2440 #####
[x] bon part 0 320k 2368k
[v] Download vivi
[k] Download linux kernel
[y] Download root_yaffs image
[c] Download root_cramfs image
[n] Download Nboot
[e] Download Eboot
[i] Download WinCE NK.nb0
[w] Download WinCE NK.bin
[d] Download & Run
[f] Format the nand flash
[p] Partition for Linux
[b] Boot the system
[s] Set the boot parameters
[t] Print the TOC struct of wince
[q] Goto shell of vivi
Enter your selection: _
```

- (2) Select [x] to partition the Nand Flash.

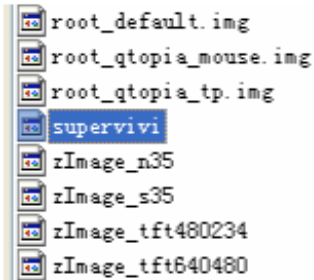
Note: Supervivi will sometimes report bad sectors of Nand Flash. Normal unless there are a lot of them.

## Installing the Bootloader

(1) Select [v] to download supervivi

```
##### FriendlyARM BIOS for 2440 #####
[x] bon part 0 320k 2368k
[v] Download vivi
[k] Download linux kernel
[y] Download root_yaffs image
[c] Download root_cramfs image
[n] Download Nboot
[e] Download Eboot
[i] Download WinCE NK.nb0
[w] Download WinCE NK.bin
[d] Download & Run
[f] Format the nand flash
[p] Partition for Linux
[b] Boot the system
[s] Set the boot parameters
[t] Print the TOC struct of wince
[q] Goto shell of vivi
Enter your selection: v
USB host is connected. Waiting a download.
```

(3) In DNW, click“USB Port->Transmit”, select the image file for supervivi (This image is under images/linux/), start to download.



(4) As soon as download completes, the BIOS will burn supervivi to Nand.

---

```
Downloaded file at 0x30000000, size = 117080 bytes
Found block size = 0x00020000
Erasing...    ... done
Writing...    ... done
Written 117080 bytes
```

```
##### FriendlyARM BIOS for 2440 #####
[x] bon part 0 320k 2368k
[v] Download vivi
[k] Download linux kernel
[y] Download root_yaffs image
[c] Download root_cramfs image
[n] Download Nboot
[e] Download Eboot
[i] Download WinCE NK.nb0
[w] Download WinCE NK.bin
[d] Download & Run
[f] Format the nand flash
[p] Partition for Linux
[b] Boot the system
[s] Set the boot parameters
[t] Print the TOC struct of wince
[q] Goto shell of vivi
Enter your selection: _
```

## Install Linux Kernel

(1) Select **[k]** to download the kernel.

(2) In DNW, click “USB Port->Transmit”, and select zImage (The image file is under images/linux/) to start the download.

Kernel images to choose from.

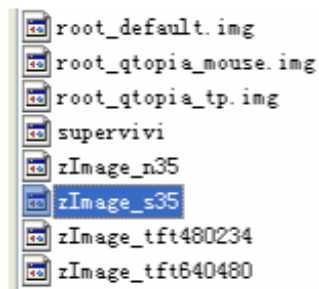
zImage\_s35 - Support Samsung 3.5" LCD

zImage\_n35 - Support NEC 3.5" LCD (The Mini35)

zImage\_a70 - Support Innolux 800x480 7" LCD (The Mini70)

zImage\_tft640480 - Support 640x480 TFT LCD

Refer to images/linux/ readme.txt for details



(3) As soon as the download completes, BIOS will burn the kernel image to Nand.

```
Downloaded file at 0x30000000, size = 1556628 bytes
Found block size = 0x00180000
Erasing...    ... done
Writing...    ... done
Written 1556628 bytes
```

```
##### FriendlyARM BIOS for 2440 #####
[x] bon part 0 320k 2368k
[v] Download vivi
[k] Download linux kernel
[y] Download root_yaffs image
[c] Download root_cramfs image
[n] Download Nboot
[e] Download Eboot
[i] Download WinCE NK.nb0
[w] Download WinCE NK.bin
[d] Download & Run
[f] Format the nand flash
[p] Partition for Linux
[b] Boot the system
[s] Set the boot parameters
[t] Print the TOC struct of wince
[q] Goto shell of vivi
Enter your selection:
```

## Install File System

(1) Select [y] to download a yaffs file system.

Note: You can also select [c], to download a cramfs file system.

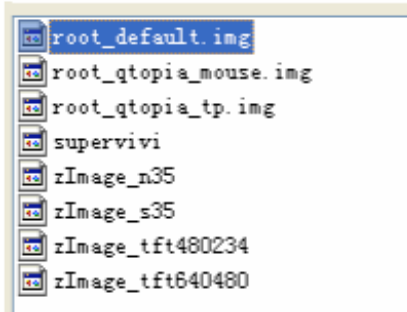
---

```
Erasing...    ... done
Writing...    ... done
Written 1556628 bytes

##### FriendlyARM BIOS for 2440 #####
[x] bon part 0 320k 2368k
[v] Download vivi
[k] Download linux kernel
[y] Download root_yaffs image
[c] Download root_cramfs image
[n] Download Nboot
[e] Download Eboot
[i] Download WinCE NK.nb0
[w] Download WinCE NK.bin
[d] Download & Run
[f] Format the nand flash
[p] Partition for Linux
[b] Boot the system
[s] Set the boot parameters
[t] Print the TOC struct of wince
[q] Goto shell of vivi
Enter your selection: y
USB host is connected. Waiting a download.
```

(2) In DNW, click“ USB Port->Transmit “ and select root Qtopia or another file system.  
Check your DVD or downloads for current file names

root\_default.img - default file system, based on arm-linux-gcc-3.4.1 lib  
 root\_mizi.img - mizi file system image, include Chinese hand write input , web browser.  
 root\_qtopia\_mouse.img - Standard qtopia with mouse based on arm-linux-gcc-3.4.1 lib  
 root\_qtopia\_tp.img - qtopia with touch screen support based on arm-linux-gcc-3.4.1 lib  
 Refer to images/linux/ readme.txt for details.



(3) As soon as the download completes, the BIOS will brun the image to Nand.

```

[c] Download root_cramfs image
[n] Download Mboot
[e] Download Eboot
[i] Download WinCE NK.nb0
[w] Download WinCE NK.bin
[d] Download & Run
[f] Format the nand flash
[p] Partition for Linux
[b] Boot the system
[s] Set the boot parameters
[t] Print the TOC struct of wince
[q] Goto shell of vivi
Enter your selection: y
USB host is connected. Waiting a download.

Now, Downloading [ADDRESS:30000000h,TOTAL:29548474]
Downloaded file at 0x30000000, size = 29548464 bytes
Flash params: oobsize = 16, oobblock = 512, erasesize = 16384, partition size =
64667648
Erasing and programming NAND with yaffs image
Block erasing(addr/count) --- Block bad(addr/count) --- Block processed/All(%)
-----
- 0x00540000/00189          0x00000000/00000          00189/03947=04%
  
```

Note : This procedure will take a while and burning continues after the listing stops. Please pull out the USB cable as soon as the download procedure completes.

**Select [b] on main menu to boot OS.** When the board is set in Nand Flash boot mode, supervivi will boot your new OS automatically after board power on.