

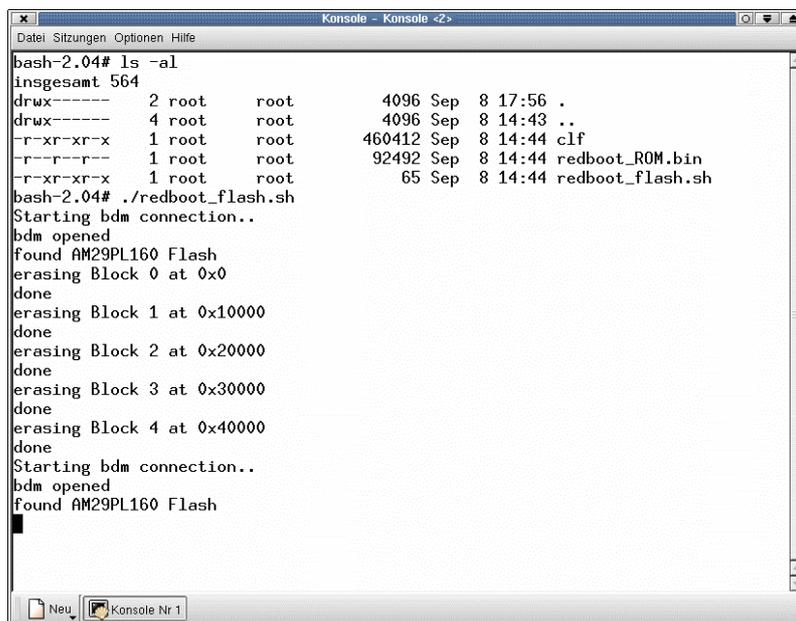
How to change the dBUG ROM Monitor to the RedBoot Boot Loader

The DIL/NetPC DNP/5280 Starter Kit CD-ROM (Version 1.3 or newer) contains the **RedBoot** boot loader for eCos (**e**mbedded **C**onfigurab**l**e **o**perating **s**ystem). Before the use of the eCos real-time operating system it is necessary to change the flash content from the dBUG ROM monitor to RedBoot boot loader.

Filename	Function
clf	BDM Command Line Flash Tool for Linux-based PCs.
redboot_flash.sh	Script File for running the Command Line Flash Tool on Linux-based PCs.
redboot_ROM.bin	RedBoot boot loader binary image file.

The table contains a file description for the content of the DNP/5280 Starter Kit CD-ROM directory `\RedBoot\default`. Please transfer this files to the hard disk drive of a Linux-based PC. Make sure that **clf** and **redboot_flash.sh** owns the necessary executable attributes (`chmod +x filename`).

- **1. Step:** Setup a BDM connection between the LPT port of a Linux-based PC and the DIL/NetPC DNP/5280. Use the DNP/5280 BDM interface adapter. Please see also: *mHT5280-17.pdf: How to use the DNP/5280 BDM Interface*.
- **2. Step:** Setup a serial link (**RS232 Serial Link**) between the DIL/NetPC DNP/5280 COM1 serial port and a serial port of your PC system. Use a null-modem cable for the physical connection between the COM1 port of the DIL/NetPC DNP/5280 and the PC COM port. For more details about this connection please use the DIL/NetPC DNP/5280 Starter Kit documentation. Provide the DIL/NetPC DNP/5280 with power
- **3. Step:** Make sure that the three files **clf**, **redboot_flash.sh** and **redboot_ROM.bin** are available within same directory of your Linux-based PC. Then run the script file **redboot_flash.sh** for programming the file **redboot_ROM.bin** with the help of the BDM interface to the DNP/5280 flash.



```

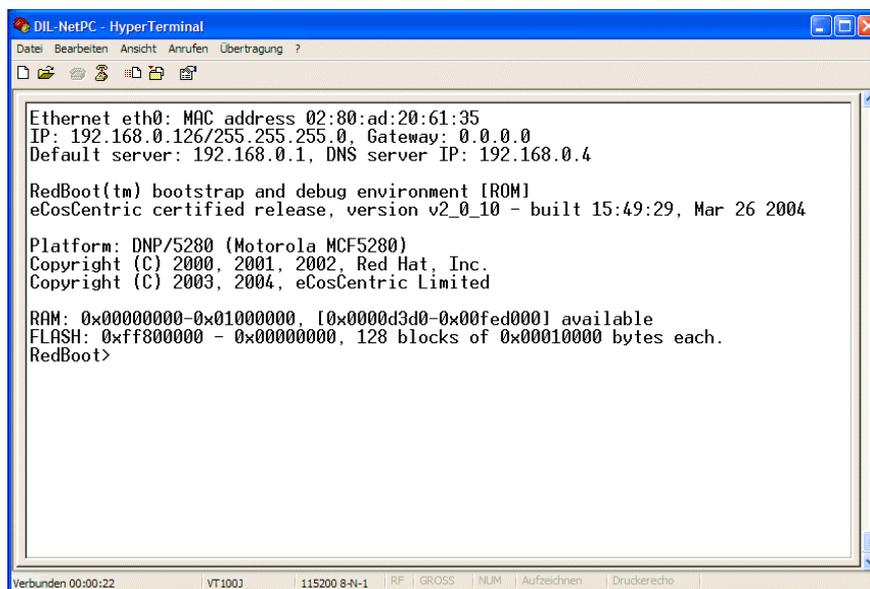
Konsole - Konsole <2>
Datei Sitzungen Optionen Hilfe
bash-2.04# ls -al
insgesamt 564
drwx----- 2 root    root      4096 Sep  8 17:56 .
drwx----- 4 root    root      4096 Sep  8 14:43 ..
-r-xr-xr-x  1 root    root      460412 Sep  8 14:44 clf
-r--r--r--  1 root    root      92492 Sep  8 14:44 redboot_ROM.bin
-r-xr-xr-x  1 root    root       65 Sep  8 14:44 redboot_flash.sh
bash-2.04# ./redboot_flash.sh
Starting bdm connection..
bdm opened
found AM29PL160 Flash
erasing Block 0 at 0x0
done
erasing Block 1 at 0x10000
done
erasing Block 2 at 0x20000
done
erasing Block 3 at 0x30000
done
erasing Block 4 at 0x40000
done
Starting bdm connection..
bdm opened
found AM29PL160 Flash

```

- **4. Step:** Wait until the BDM programming process finish's without a error message. Then remove the power from the DNP/5280 and disconnect the BDM interface adapter. The DNP/5280 flash contains now a copy of the RedBoot boot loader.

Please note: The BDM programming process needs a Linux-based PC. The usage of the RedBoot user interface is possible with a Windows- or Linux-based PC.

- **5. Step:** Run your terminal emulation program. Microsoft Windows-based PC systems offer *HyperTerminal* for this task. Linux-based systems come with *Minicom*. Then provide the DIL/NetPC DNP/5280 with power. RedBoot displays a power-up message similar to the following picture.



```
DIL-NetPC - HyperTerminal
Datei Bearbeiten Ansicht Anrufen Übertragung ?
Ethernet eth0: MAC address 02:80:ad:20:61:35
IP: 192.168.0.126/255.255.255.0, Gateway: 0.0.0.0
Default server: 192.168.0.1, DNS server IP: 192.168.0.4

RedBoot(tm) bootstrap and debug environment [ROM]
eCosCentric certified release, version v2_0_10 - built 15:49:29, Mar 26 2004

Platform: DNP/5280 (Motorola MCF5280)
Copyright (C) 2000, 2001, 2002, Red Hat, Inc.
Copyright (C) 2003, 2004, eCosCentric Limited

RAM: 0x00000000-0x01000000, [0x0000d3d0-0x00fed000] available
FLASH: 0xff800000 - 0x00000000, 128 blocks of 0x00010000 bytes each.
RedBoot>
```

Please note: The DNP/5280 eCos Starter Kit comes with a pre-installed RedBoot. The steps within this document shows how to change a Linux-based DNP/5280 to a eCos-ready DIL/NetPC.

That is all.