

How to install and use the GNU Cross Tool Chain for the DNP/5280 Linux

The following steps describes how to install and use the Linux GNU cross tool chain for DNP/5280 Linux C programming. You need administrator rights on your Linux PC for following these steps.

• 1. Step: The GNU cross tool chain for DNP/5280 Linux C programming comes within a Linux shell script file with the name m68k-elf-tool-20030314.sh. You find this file at the DIL/NetPC DNP/5280 Starter Kit CD-ROM. The location of this 18 Mbytes shell script file is \uClinux\Toolchain. Point your file manager to m68k-elf-tool-20030314.sh.



• 2. Step: Copy m68k-elf-tool-20030314.sh to your local hard disk drive. Change the file attributes to executable. You can use the Linux command line:

chmod +x m68k-elf-tool-20030314.sh

for this task. Some file managers offers simpler ways for attribute changing.

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• 3. Step: Run the shell script file m68k-elf-tool-20030314.sh from a console window at your Linux-based PC. The shell script creates new directories at /usr/local and copy's many files to the new directory of your PC hard disk drive.

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bash-2.04# ls -al m68k-elf-tools-20030314.sh	
-r-xr-xr-x 1 root root 19172830 Dez 12 17:43 m68k-elf-tools-20030314.sh	
bash-2.04# ./m68k-elf-tools-20030314.sh	
./usr/local/m68k-elf/	
./usr/local/m68k-elf/bin/	
./usr/local/m68k-elf/bin/nm	
./usr/local/m68k-elf/bin/strip	
./usr/local/m68k-elf/bin/ar	
./usr/local/m68k-elf/bin/ranlib	
./usr/local/m68k-elf/bin/as	
./usr/local/m68k-elf/bin/ld	
./usr/local/m68k-elf/bin/flthdr	
./usr/local/m68k-elf/bin/gcc	
./usr/local/m68k-elf/bin/elf2flt	
./usr/local/m68k-elf/bin/ld.real	
./usr/local/m68k-elf/lib/	
./usr/local/m68k-elf/lib/ldscripts/	-
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• 4. Step: Now it's time for a test drive with the new GNU cross tool chain. Open up a console window and create a new directory /home/dnp5280 for DNP/5280 Linux C programming. Then change to this directory and enter the following command lines:

```
cat > hello.c
#include <stdio.h>
#include <stdlib.h>
void main (void)
{
    printf ("Hello from DNP/5280!");
}
CTRL-D (stops the cat command and saves the input to the file hello.c)
```

These command lines creates a new file with name hello.c and put some C source code lines to this new file. The command line:

cat hello.c

displays the current content of hello.c. For building a executable from hello.c please enter the following command line:

m68k-elf-gcc -Wall -m5307 -Wl,-elf2flt -Os -o hello hello.c -lc

This command lines runs the GNU C cross compiler and linker. After a successful run you find a executable for the DNP/5280 within the same directory.





• 5. Step: Transfer the executable from your PC hard disk drive to the DNP/5280 RAM disk or JFFS-based flash disk drive and run the executable on your DNP/5280. Use a TFTP session and a Telnet session for this task. Please enter the following commands within the DNP/5280 Telnet session window:

```
tftp -g -l hello 192.168.0.1
chmod +x hello
./hello
```

The first command line transfers the executable **hello** from the PC to the DIL/NetPC DNP/5280. This line assumes that the your PC is using the IP address 192.168.0.1. The second line makes sure that the executable attribute is set for **hello**. The next command line runs **hello**.

That is all.