

Getting started Linux DF PROFI II

1 Disclaimer

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2 Validity

This document describes the installation of the software and the configuration of the DF PROFI II with Linux.

3 Install Driver

- Install the DF PROFI II PCI/CPCI/PCIe board in your PC system.
Please note, if a DF PROFI II CPCI board is used, the board does not support Hot Plugging. If installing/uninstalling the board, the Compact PCI system must be switched off and the power supply must be interrupted.
- Your PC system is switched on.
- Start the Shellscrip DFPROFI_II-INSTALL.sh from the KUNBUS driver DVD.
- Insert the directory where the package should be installed. Default directory is /usr/local. The software will be installed in subdirectory dfprpci (input is marked yellow).

```
Installing

      DFPROFI_II_PCI for Linux/i386

Where would you install the DFPROFI_II-PCI package?
(normally will be installed in directory named '/usr/local/' or
'/opt/'.)

[Default /usr/local, or 'q' to quit] /usr/local

DFPROFI_II_PCI package will be installed in /usr/local/dfprpci

Installing...dfpr_ii_pci.rpm
Preparing...      ##### [100%]
1:DFPROFI_II_PCI  ##### [100%]
copy dfprpci.o

DFPROFI_II-PCI package installation complete.

Do you want to start driver now ? [yn]

#
```

Figure 1: Install driver

4 LED Indication

Green LED:

- On: Firmware loaded and started.
- Off: Firmware not loaded.

Yellow LED:

- On: PROFIBUS started.
- Off: PROFIBUS stopped.

Red LED:

- On: PROFIBUS failure (at least one Slave is not connected to the bus or with external diagnosis).
- Off: No PROFIBUS failure.

5 Operation as PROFIBUS Master

The PROFIBUS configuration is carried out by the KUNBUS PROFIBUS configuration tool Configurator III.exe. At the Moment, Configurator III.exe is only available for Windows operating systems. But you can copy the configuration file to a Linux system:

- ✓ You have a Windows PC.
 - Insert the driver dvd.
 - Open the folder “Konfigurator_III”.
 - Select the file “setup.exe” with double click.
 - Follow the installation instructions.
 - ⇒ You have installed Configurator III.
 - Create a configuration.
 - You will find a detailed description of Configurator III in the online help.
 - Save the configuration.
 - ⇒ You have created a *.CFG-file.
 - Copy the *.CFG-file to the PC where the DF PROFI II is installed.
 - Start DF PROFI II Configuration Loader on your Linux PC.
 - ⇒ The following dialogue box will open:



Figure 2: Close application

- Close all applications, which access to DF PROFI II with “OK”.
 - ⇒ The following dialogue box will open:



Figure 3: Select path

- Click on the folder symbol.

⇒ The following dialogue box will open:

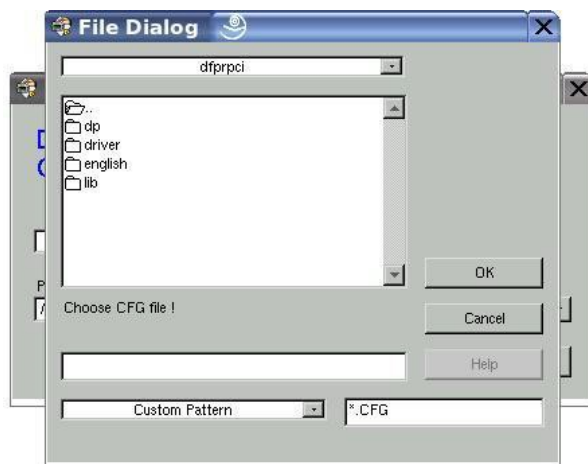


Figure 4: Select file

- Select the configuration file
- Click “OK”
- Click “Start”
 - ⇒ The configuration file is loaded on DF PROFI II.
 - ⇒ DF PROFI II is now ready to use.

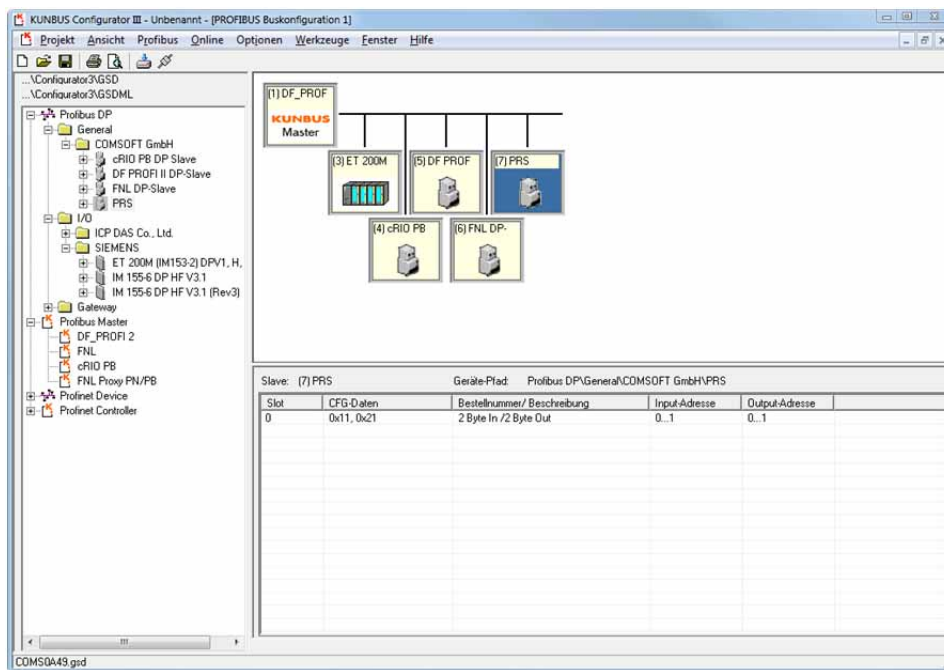


Figure 5: Configuration tool Configurator III

6 Operation as PROFIBUS Slave

If you are using the DF PROFI II as DP Slave you must not download a configuration file. The necessary initialization must be carried out directly by the application.

Please note that you will find detailed information about the initialization of the board as DP Slave in the source code of the PROFIBUS sample program (see chapter “example program”).

7 Sample Program

The delivery package includes a detailed C/C++ sample code.

You will find the sample program in the installed directory (default: /usr/local/dfprpci). It is a Windows 32-Bit console application focused on the DF PROFI II programming interface. The sample does not support any graphical features for the sake of clarity. The sample program includes the following features:

- Initializing the DF PROFI II board

DP Master Operation:

- Start the DF PROFI II board
- Write/Read of I/O data and diagnostic information

DP Slave Operation:

- Initializing the DF PROFI II board
- Write/Read of I/O data

Please note, that the source code of the sample program has to be adapted to the configuration of the DP Master.

- Start the sample program DF_PROFI_2_PCI_Demo
- If you have more than one installed DF PROFI II boards you must start the sample program with parameters:

DF_PROFI_2_PCI_Demo 1 1 (1.parameter board, 2. channel, default 1)

DF_PROFI_2_PCI_Demo 2 1 (1.parameter board, 2. channel, default 1)

⇒ The following menu will open:

```

DFProfi-2-PCI Test Programm V1.2

I Initialize hardware      :
O Open channel            :
C Close channel           :
S Start profibus Traffic  :
G Get Process Data        :
P Put Process Data        :
E Exchange processdata    :
D Get diagnose from slave :
L Set Debug Level for RS232:
A Init as Slave           :
F PutGet SlaveData       :

Esc End

Your Input:

```

Figure 6: DF PROFI II test program

Command	Function	Operation mode
I	First enter: Initialize DF PROFI II Second enter: Close DF PROFI II	Master/Slave
O	Open communication channel	Master/Slave
C	Close communication channel	Master
S	Start PROFIBUS	Master
G	Read process data	Master
P	Write process data	Master
E	Read/write process data	Master
D	Read diagnosis data of a slave	Master
L	Read out errors (only for support)	Master
A	Initialize Slave	Slave
F	Read/write data of a Slave	Slave
Esc	Close program	Master/Slave

Tabelle 1: Commands

Using DF PROFI II as DP Master

✓ You have loaded a valid PROFIBUS configuration to the DF PROFI II.

- Press "I"
 - ⇒ The DF PROFI II is initialized.
 - ⇒ The green light in the front panel of the board is switched on.
- Press "O".
 - ⇒ A communication channel will open.
- Press "S"
 - ⇒ PROFIBUS is starting.
 - ⇒ The yellow light in the front panel of the board is switched on. If not all configured Slaves are working properly, e.g. if one Slave is not connected, the red light is switched on additionally.

⇒ Now you can use DF PROFI II as DP Master.

Using DF PROFI II as DP Slave

- Press "I"
 - ⇒ DF PROFI III is initialized. The DF PROFI II is initialized.
 - ⇒ The green light in the front panel of the board is switched on.
- Press "O"
 - ⇒ A communication channel will open.
- Press "A"
 - ⇒ The DF PROFI II is initialized as DP Slave.

⇒ Now, you can use DF PROFI as DP Slave.

The sample program defines the following as default:

- **Baudrate:** 1.5 MBit (6)
- **PROFIBUS address:** 11
- **I/O-Konfiguration:** 4 Byte Input / 4Byte Output
(CFG-Bytes: 0x13, 0x23)

You can find all possible I/O configurations (necessary CFG Bytes included) in the DFPROFI GSD-File. The configuration of the DP Slave must be identical with the configuration of the DP Master.

Beispielprogramm beenden

- Press "I"
 - ⇒ The connection to the PROFIBUS is closed.
- Press "C"
 - ⇒ The Communication channel is closed.
- Press "Esc"
 - ⇒ The program is closed.