How To Install Xilinx ISE + Platform Cable USB II / parallel

Drivers on OpenSuSE Linux

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Abstract: *Guideline to install the XILINX IDE ISE on OpenSuSE Linux systems. Focus is on installing drivers for platform cables.*

Contents

1 Preface

This document aims to help Open SuSE users installing the powerful ISE tool made by Xilinx. While the installation of ISE itself is easy the **Platform Cable USB II and parallel Cable IV driver** installation is a major issue of this document. The Xilinx drivers shipped with ISE are of no value since they have been compiled with a certain Linux kernel. Most of other Linux kernels are not supported.

The scenarios I described here a just a record of what I did in order to solve the problem. Combinations of other Linuxes and ISE / *Vivado* versions may work by this guide as well.

There is no focus on how to use ISE, how to manage licenses or how to write HDL code. Please refer to the official Xilinx documentation at www.xilinx.com .

I appreciate every hint or critics to improve the quality of this document.

Please send your comments to mario.blunk@blunk-electronic.de . Thank you !

Thank you Pawel for your feedback ! :-)

2 ISE Installation on OpenSuSE Linux 11.1

The procedure below applies to both ISE 10.1 and ISE 11.1.

1) Log in as non-root user.

2) Download file Xilinx_11.1_WebPack_SFD.tar[1] from www.xilinx.com

3) Save this file in your home directory.

4) Open console.

5) Run command `tar -xf Xilinx_11.1_WebPack_SFD.tar`

6) Run command `su`

7) Type your root password.

8) Change into directory Xilinx_11.1_WebPack_SFD

9) Run command `./setup` for ISE 10.1 or `./xsetup` for ISE 11.1.

10) Follow instructions given by the ISE installation process. When you are asked to install cable drivers, **select** driver installation[2].

    Don't care about the box that informs you about any environment variables required for ISE (see section 7 Setting up the start-up script for more).

    Don't care about the message box in the end of the installation procedure saying that your cable driver installation has failed. We'll care about that later.

11) Do **not** start ISE.

---

1 The TAR-File name for ISE 10.1 differs from this notation of course.

2 This way the firmware files get installed in your system directory /usr/share .

2.1 Cable Driver Installation

2.1.1   Platform Cable USB II

1) Log in as root

2) Do **not** start ISE. Close ISE if it is running already.

3) **Disconnect** your target hardware, your UUT or DUT (or however you call it) from the Platform USB II cable.

4) start YAST and install packages fxload, make, gcc and libusb-devel.

5) Plug in the Platform USB II cable[3]. The LED on the cable should light up <mark>yellow</mark> now.

   If the LED does not come up, run command: `ls -l /usr/share/*.hex`

   There should be a bunch of files ending with "hex". If they are not there **rerun** the basic ISE installation and make sure the driver installation **is** selected (see page 4 section 2 action point 10.

   If the yellow LED still does not come on, open a console and type command `lsusb | grep Xilinx`

   If the firmware upload to the USB cable has failed it should output a line like:

   `Bus 002 Device 002: ID 03fd:0013 Xilinx, Inc.`

   So you know the cable is at least present and connected to the PC.

   If the firmware upload has succeeded the output is:

   `Bus 004 Device 004: ID 03fd:0008 Xilinx, Inc.`

   Important is the number marked in red. It states that the cable firmware has been loaded properly.

6) Change to directory /etc/udev/rules.d/

7) Run command `touch libusb-driver.rules`

8) Open file libusb-driver.rules with vi or other text editor.

---

3 I do not recommend any USB extension cords as they may influence the power supply negatively.

9) Paste this line into file libusb-driver.rules :

```
ACTION=="add", SUBSYSTEMS=="usb", ATTRS{idVendor}=="03fd", MODE="666"
```

10) Save file libusb-driver.rules

11) Close text editor.

12) Do **not** start ISE.

13) Log out.

14) Restart your PC.

15) Do **not** start ISE.

16) Install the actual cable driver as described in section 6 Installation of the USB II - cable driver page 22.

2.1.2   Parallel Port Cable IV[4]

1) Log in as root

2) Do **not** start ISE. Close ISE if it is running already.

3) **Disconnect** your target hardware, your UUT or DUT (or however you call it) from the cable.

4) **Disconnect** your Parallel Cable IV from your PC.

5) start YAST and install packages fxload, make, gcc and libusb-devel.

6) in YAST go to "*Security and Users*" then select "*User and Group Management*".

7) Edit the user who is supposed to work with the cable and make it member of the group *lp*.

8) Exit YAST.

9) Shut down your PC.

10) Plug in the Parallel Cable IV on your PCs LPT port.

11) Power up the Parallel Cable IV.

12) Start your PC and enter PC BIOS.

13) Make sure your LPT (parallel) port is set to mode *ECP* or *Bidir*.

14) Exit BIOS.

15) Restart your PC.

---

4 Later I discovered the *Parallel Cable III* can also set up this way. It may not need the procedure at all since it is very simple regarding its innards. However it works perfectly on my system.

3 ISE Installation on OpenSuSE Linux 12.1 (32bit)

The procedure below applies to both ISE 10.1 and ISE 11.1.

1) Log in as non-root user.

2) Download file Xilinx_11.1_WebPack_SFD.tar[5]" from www.xilinx.com

3) Save this file in your home directory.

4) Open console.

5) Run command `tar -xf Xilinx_11.1_WebPack_SFD.tar`

6) Run command `su`

7) Type your root password.

8) Change into directory Xilinx_11.1_WebPack_SFD

9) Run command `./setup` for ISE 10.1 or `./xsetup`   for ISE 11.1.

10) Follow instructions given by the ISE installation process. When you are asked to install cable drivers, **select** driver installation[6].

   Don't care about the box that informs you about any environment variables required for ISE (see section 7 Setting up the start-up script for more).

   If you don't have a license file yet, **close** the window that asks you for licensing and proceed.

   Don't care about the message box in the end of the installation procedure saying that your cable driver installation has failed. We'll care about that later.

11) Do **not** start ISE.

12) Change into directory /opt/Xilinx/11.1/ISE/bin/lin/

13) Run command `cp *.hex /usr/share`

   This way the firmware files are copied where they belong[7].

---

5 The TAR-File name for ISE 10.1 differs from this notation of course.

6 In contrast to SuSe 11.1 the firmware files (*.hex) are not placed in /usr/share here. They will reside in directory /opt/Xilinx/11.1/ISE/bin/lin/ .

7 I have no clue why the ISE installation procedure does not copy them into /usr/share by default. Instead a directory /etc/hotplug/usb/xusbdfwu.fw is created by the Xilinx installation procedure where the *.hex files get stored.
   It is also strange that the *.hex files in /opt/Xilinx/11.1/ISE/bin/lin/ are different from the ones stored in /etc/hotplug/usb/xusbdfwu.fw . However I ignored the latter.

Blunk electronic at www.blunk-electronic.de

14) Run command `cp xusbdfwu.rules /etc/udev/rules.d/`

15) Do **not** start ISE.

16) Open file xusbdfwu.rules in directory /etc/udev/rules.d/ with a text editor and change the words $TEMPNODE to $tempnode. See Text 1 and Text 2 on page 9.

```
# version 0003
SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0008", MODE="666"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0007", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusbdfwu.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0009", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xup.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="000d", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_emb.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="000f", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xlp.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0013", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xp2.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0015", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xse.hex -D $TEMPNODE"
```

Text 1: xusbdfwu.rules before

```
# version 0003
SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0008", MODE="666"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0007", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusbdfwu.hex -D $tempnode"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0009", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xup.hex -D $tempnode"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="000d", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_emb.hex -D $tempnode"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="000f", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xlp.hex -D $tempnode"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0013", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xp2.hex -D $tempnode"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0015", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xse.hex -D $tempnode"
```

Text 2: xusbdfwu.rules after

17) Run command

`cp /usr/lib/libstdc++.so.6 /opt/Xilinx/11.1/ISE/bin/lin/`

(or better create a symlink)

18) Log off the root user and

19) log in as non-root user.

20) Do **not** start ISE.

3.1 Cable Driver Installation

3.1.1   Platform Cable USB II

1) Log in as root

2) Do **not** start ISE. Close ISE if it is running already.

3) **Disconnect** your target hardware, your UUT or DUT (or however you call it) from the Platform USB II cable.

4) start YAST and install packages `fxload`, `make`, `gcc` , `libpng12-0` and `libusb-compat-devel`

5) Probably you may need to reboot now.

6) Plug in the Platform USB II cable[8]. The LED on the cable should light up `yellow` now.

   If the LED does not come up, run command `ls -l /usr/share/*.hex`

   There should be a bunch of files ending with "hex". If they are not there see page 8 action point and following steps.

   If the yellow LED still does not come on, open a console and type command

   `lsusb | grep Xilinx`

   If the firmware upload to the USB cable has failed it should output a line like:

   `Bus 002 Device 002: ID 03fd:0013 Xilinx, Inc.`

   So you know the cable is at least present and connected to the PC.

   If the firmware upload has succeeded it should read:

   `Bus 004 Device 004: ID 03fd:0008 Xilinx, Inc.`

   Important is the number marked in red. It states that the cable firmware has been loaded properly.

7) Change to directory /etc/udev/rules.d/

8) Run command `touch libusb-driver.rules`

9) Open file libusb-driver.rules with vi or other text editor.

---

8   I do not recommend any USB extension cords as they may influence the power supply negatively.

10) Paste this line into file libusb-driver.rules :

```
ACTION=="add", SUBSYSTEMS=="usb", ATTRS{idVendor}=="03fd", MODE="666"
```

11) Save file libusb-driver.rules

12) Close text editor.

13) Log out.

14) Do **not** start ISE.

15) Restart your PC.

16) Do **not** start ISE.

17) Install the actual cable driver as described in section 6 Installation of the USB II - cable driver page 22.

3.1.2　　　　Parallel Cable IV[9]

1) Log in as root

2) Do **not** start ISE. Close ISE if it is running already.

3) **Disconnect** your target hardware, your UUT or DUT (or however you call it) from the cable.

4) **Disconnect** your Parallel Cable IV from your PC.

5) start YAST, go to section /etc/sysconfig Editor and set module *lp* to be loaded on boot. see screen shot below
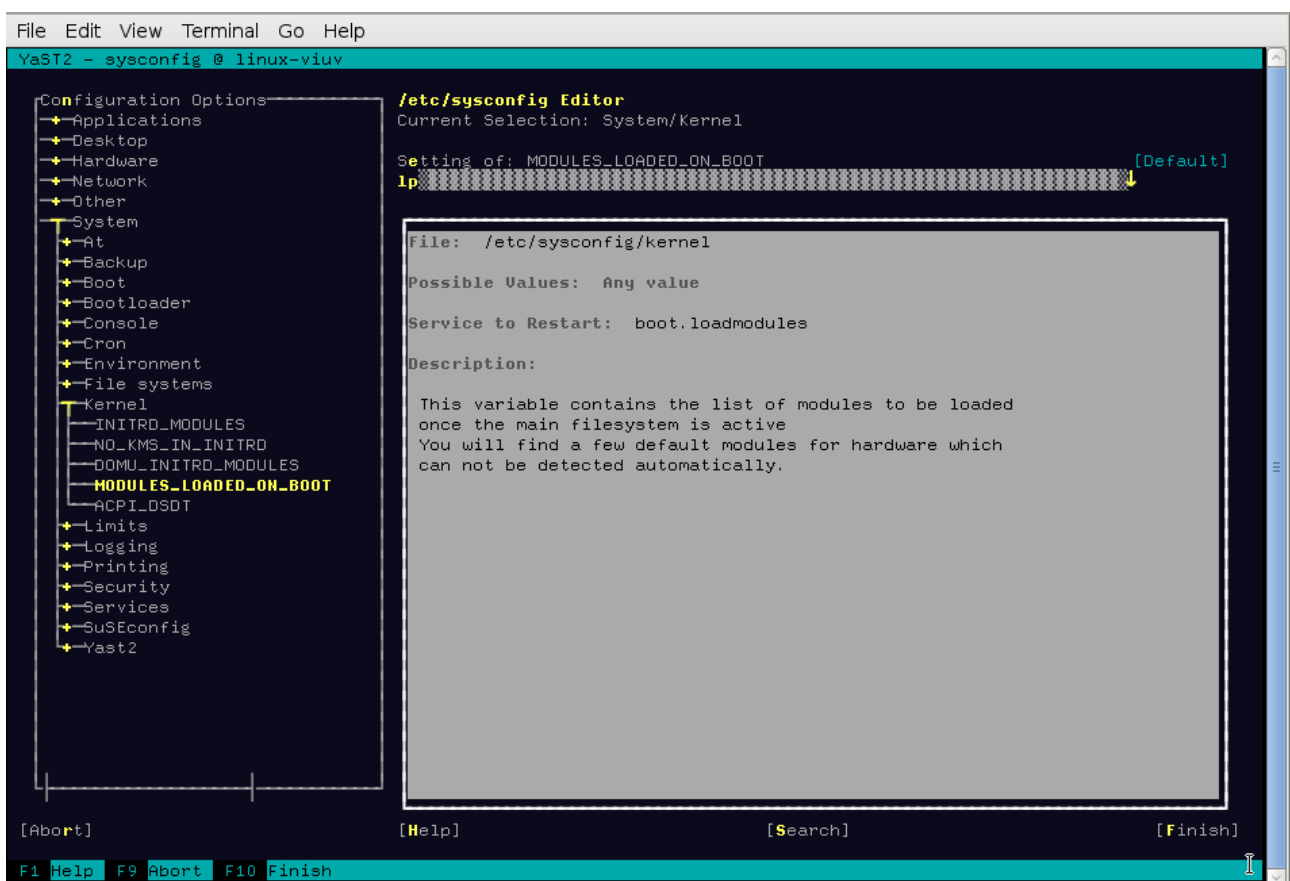
6) Install packages fxload, make, gcc, libpng12-0 and libusb-compat-devel

7) in YAST go to *Security and Users* then select *User and Group Management*.

8) Edit the user who is supposed to work with the cable and make it member of the group *lp*.

9　Later I discovered the *Parallel Cable III* can also set up this way. It may not need the procedure at all since it is very simple regarding its innards. However it works perfectly on my system.

9) Exit YAST.

10) Shut down your PC.

11) Plug in the Parallel Cable IV on your PCs LPT port.

12) Power up the Parallel Cable IV.

13) Start your PC and enter PC BIOS.

14) Make sure your LPT (parallel) port is set to mode *ECP* or *Bidir*

15) Exit BIOS.

16) Restart your PC.

4 ISE Installation on OpenSuSE Linux Leap 42.1 (64bit)

The procedure below applies to ISE 14.7.

1) Log in as non-root user.

2) Download file Xilinx_ISE_DS_Lin_14.7_1015_1.tar from www.xilinx.com

3) Save this file in your home directory.

4) Open console.

5) Run command `tar -xf Xilinx_ISE_DS_Lin_14.7_1015_1.tar`

6) Run command `su`

7) Type your root password.

8) Change into directory Xilinx_ISE_DS_Lin_14.7_1015_1

9) Run command `./xsetup`

10) Follow instructions given by the ISE installation process. When you are asked to install cable drivers, **select** driver installation.

    Don't care about the box that informs you about any environment variables required for ISE (see section 7 Setting up the start-up script for more).

    If you don't have a license file yet, **close** the window that asks you for licensing and proceed.

    Don't care about the message box in the end of the installation procedure saying that your cable driver installation has failed. We'll care about that later.

11) Do **not** start ISE.

12) Change into directory /opt/Xilinx/14.7/ISE_DS/common/bin/lin64/

13) Run command `cp *.hex /usr/share`

    This way the firmware files are copied where they belong.

14) Run command `cp xusbdfwu.rules /etc/udev/rules.d/`

15) Do **not** start ISE.

16) Open file xusbdfwu.rules in directory /etc/udev/rules.d/ with vi or other text editor and do following replacements (See Text 3 and Text 4 on page 15):

$TEMPNODE → $tempnode

BUS → SUBSYSTEMS

SYSFS → ATTRS

```
# version 0003
SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0008", MODE="666"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0007", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusbdfwu.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0009", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xup.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="000d", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_emb.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="000f", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xlp.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0013", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xp2.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0015", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xse.hex -D $TEMPNODE"
```

Text 3: xusbdfwu.rules before

```
# version 0003
ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="0008", MODE="666"
SUBSYSTEMS=="usb", ACTION=="add", ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="0007", RUN+="/sbin/fxload -v -t fx2
-I /usr/share/xusbdfwu.hex -D $tempnode"
SUBSYSTEMS=="usb", ACTION=="add", ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="0009", RUN+="/sbin/fxload -v -t fx2
-I /usr/share/xusb_xup.hex -D $tempnode"
SUBSYSTEMS=="usb", ACTION=="add", ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="000d", RUN+="/sbin/fxload -v -t fx2
-I /usr/share/xusb_emb.hex -D $tempnode"
SUBSYSTEMS=="usb", ACTION=="add", ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="000f", RUN+="/sbin/fxload -v -t fx2
-I /usr/share/xusb_xlp.hex -D $tempnode"
SUBSYSTEMS=="usb", ACTION=="add", ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="0013", RUN+="/sbin/fxload -v -t fx2
-I /usr/share/xusb_xp2.hex -D $tempnode"
SUBSYSTEMS=="usb", ACTION=="add", ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="0015", RUN+="/sbin/fxload -v -t fx2
-I /usr/share/xusb_xse.hex -D $tempnode"
```

Text 4: xusbdfwu.rules after

17) Probably not required: **Better skip this step**. Run command

```
cp /usr/lib/libstdc++.so.6 /opt/Xilinx/14.7/ISE_DS/common/lib/lin64/
```

or better create a symlink:

```
ln -s /usr/lib/libstdc++.so.6 /opt/Xilinx/14.7/ISE_DS/common/lib/lin/libstc++.so.6
```

18) Log off the root user and

19) log in as non-root user.

20) Do **not** start ISE.

4.1 Cable Driver Installation

4.1.1   Platform Cable USB II

1) Log in as root

2) Do **not** start ISE. Close ISE if it is running already.

3) **Disconnect** your target hardware, your UUT or DUT (or however you call it) from the Platform USB II cable.

4) start YAST and install packages fxload, make, gcc, libpng12-0 and libusb-compat-devel

5) Probably you may need to reboot now.

6) Plug in the Platform USB II cable[10]. The LED on the cable should light up `yellow` now.

   If the LED does not come up, run command: `ls -l /usr/share/*.hex`

   There should be a bunch of files ending with "hex". If they are not there see page 8 action point and following steps.

   If the yellow LED still does not come on, open a console and type command

   `lsusb | grep Xilinx`

   If the firmware upload to the USB cable has failed it should output a line like:

   `Bus 002 Device 002: ID 03fd:0013 Xilinx, Inc.`

   So you know the cable is at least present and connected to the PC.

   If the firmware upload has succeeded it should read:

   `Bus 004 Device 004: ID 03fd:0008 Xilinx, Inc.`

   Important is the number marked in red. It states that the cable firmware has been loaded properly.

7) Change to directory /etc/udev/rules.d/

8) Run command `touch libusb-driver.rules`

9) Open file libusb-driver.rules with vi or other text editor.

---

10 I do not recommend any USB extension cords as they may influence the power supply negatively.

10) Paste this line into file libusb-driver.rules :

```
ACTION=="add", SUBSYSTEMS=="usb", ATTRS{idVendor}=="03fd", MODE="666"
```

11) Save file libusb-driver.rules

12) Close text editor.

13) Log out.

14) Do **not** start ISE.

15) Restart your PC.

16) Do **not** start ISE.

17) Install the actual cable driver as described in section 6 Installation of the USB II - cable driver page 22.

5 ISE Installation on OpenSuSE Tumbleweed (32bit)

The procedure below applies to ISE 14.7.

1) Log in as non-root user.

2) Download file Xilinx_ISE_DS_Lin_14.7_1015_1.tar from www.xilinx.com

3) Save this file in your home directory.

4) Open console.

5) Run command `tar -xf Xilinx_ISE_DS_Lin_14.7_1015_1.tar`

6) Run command `su`

7) Type your root password.

8) Make sure package `ncurses5` is installed. Install it if nessecary.

9) Change into directory Xilinx_ISE_DS_Lin_14.7_1015_1

10) Run command `./xsetup`

11) Follow instructions given by the ISE installation process. When you are asked to install cable drivers, **select** driver installation.

    Don't care about the box that informs you about any environment variables required for ISE (see section 7 Setting up the start-up script for more).

    If you don't have a license file yet, **close** the window that asks you for licensing and proceed.

    Don't care about the message box in the end of the installation procedure saying that your cable driver installation has failed. We'll care about that later.

12) Do **not** start ISE.

13) Change into directory /opt/Xilinx/14.7/ISE_DS/common/bin/lin/

14) Run command `cp *.hex /usr/share`

    This way the firmware files are copied where they belong.

15) Run command `cp xusbdfwu.rules /etc/udev/rules.d/`

16) Do **not** start ISE.

17) Open file xusbdfwu.rules in directory /etc/udev/rules.d/ with vi or other text editor and do following replacements (See Text 5 and Text 6 on page 19):

$TEMPNODE → $tempnode

BUS → SUBSYSTEMS

SYSFS → ATTRS

```
# version 0003
SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0008", MODE="666"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0007", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusbdfwu.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0009", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xup.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="000d", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_emb.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="000f", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xlp.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0013", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xp2.hex -D $TEMPNODE"
BUS=="usb", ACTION=="add", SYSFS{idVendor}=="03fd", SYSFS{idProduct}=="0015", RUN+="/sbin/fxload -v -t fx2 -I
/usr/share/xusb_xse.hex -D $TEMPNODE"
```

Text 5: xusbdfwu.rules before

```
# version 0003
ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="0008", MODE="666"
SUBSYSTEMS=="usb", ACTION=="add", ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="0007", RUN+="/sbin/fxload -v -t fx2
-I /usr/share/xusbdfwu.hex -D $tempnode"
SUBSYSTEMS=="usb", ACTION=="add", ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="0009", RUN+="/sbin/fxload -v -t fx2
-I /usr/share/xusb_xup.hex -D $tempnode"
SUBSYSTEMS=="usb", ACTION=="add", ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="000d", RUN+="/sbin/fxload -v -t fx2
-I /usr/share/xusb_emb.hex -D $tempnode"
SUBSYSTEMS=="usb", ACTION=="add", ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="000f", RUN+="/sbin/fxload -v -t fx2
-I /usr/share/xusb_xlp.hex -D $tempnode"
SUBSYSTEMS=="usb", ACTION=="add", ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="0013", RUN+="/sbin/fxload -v -t fx2
-I /usr/share/xusb_xp2.hex -D $tempnode"
SUBSYSTEMS=="usb", ACTION=="add", ATTRS{idVendor}=="03fd", ATTRS{idProduct}=="0015", RUN+="/sbin/fxload -v -t fx2
-I /usr/share/xusb_xse.hex -D $tempnode"
```

Text 6: xusbdfwu.rules after

18) Log off the root user and

19) log in as non-root user.

20) Do **not** start ISE.

5.1 Cable Driver Installation

5.1.1   Platform Cable USB II

1) Log in as root

2) Do **not** start ISE. Close ISE if it is running already.

3) **Disconnect** your target hardware, your UUT or DUT (or however you call it) from the Platform USB II cable.

4) start YAST and install packages fxload, make, gcc, libpng12-0 and libusb-compat-devel

5) Probably you may need to reboot now.

6) Plug in the Platform USB II cable[11]. The LED on the cable should light up `yellow` now.

   If the LED does not come up, run command: `ls -l /usr/share/*.hex`

   There should be a bunch of files ending with "hex". If they are not there see page 8 action point and following steps.

   If the yellow LED still does not come on, open a console and type command

   `lsusb | grep Xilinx`

   If the firmware upload to the USB cable has failed it should output a line like:

   `Bus 002 Device 002: ID 03fd:0013 Xilinx, Inc.`

   So you know the cable is at least present and connected to the PC.

   If the firmware upload has succeeded it should read:

   `Bus 004 Device 004: ID 03fd:0008 Xilinx, Inc.`

   Important is the number marked in red. It states that the cable firmware has been loaded properly.

7) Change to directory /etc/udev/rules.d/

8) Run command `touch libusb-driver.rules`

9) Open file libusb-driver.rules with vi or other text editor.

---

11 I do not recommend any USB extension cords as they may influence the power supply negatively.

      Blunk electronic at www.blunk-electronic.de

10) Paste this line into file libusb-driver.rules :

```
ACTION=="add", SUBSYSTEMS=="usb", ATTRS{idVendor}=="03fd", MODE="666"
```

11) Save file libusb-driver.rules

12) Close text editor.

13) Log out.

14) Do **not** start ISE.

15) Restart your PC.

16) Do **not** start ISE.

17) Install the actual cable driver as described in section 6 Installation of the USB II - cable driver page 22 .

6 Installation of the USB II - cable driver

6.1 Downloading Driver Source Code

1) Log in as ordinary (non root) user.

2) In your home directory create a folder named for example *ise-usb-driver*.

3) Start your internet browser and go directly to

   http://git.zerfleddert.de/cgi-bin/gitweb.cgi/usb-driver?a=snapshot;h=HEAD;sf=tgz

   or alternatively to http://www.rmdir.de/~michael/xilinx/

   Note: If you don't get access to the file "usb-driver-HEAD.tar.gz" you may contact me via email so that I can send you the file.

4) Save the file usb-driver-HEAD.tar.gz in folder ise-usb-driver.

6.2 Compiling the driver

1) Log in as non-root user.

2) Open a console and change (cd) into directory ise-usb-driver.

3) Run command `gunzip usb-driver-HEAD.tar.gz`

4) Run comand `tar -xf usb-driver-HEAD.tar`

5) Run command `cd usb-driver`

6) Run command `make`.

7) Run command `ls libusb-driver.so`

8) It should output: `libusb-driver.so`

9) Now the driver is compiled and ready for use.

10) Do **not** start ISE.

7 Setting up the start-up script

Since ISE requires some environment variables set I prefer to initialize them by means of a shell script. This script gets called by an ordinary user.

1) Create a folder named `scripts` for example in your home directory.

2) Open console.

3) Change into folder `scripts`

4) Run command `touch ise-go`

5) Run command `chmod 755 ise-go`

6) Open file ise-go with a text editor.

7) Paste the following lines into file ise-go :

```
#! /bin/sh
source /opt/Xilinx/10.1/ISE/settings32.sh # comment if required
#source /opt/Xilinx/11.1/ISE/settings32.sh # uncomment if required
#source /opt/Xilinx/14.7/ISE_DS/settings64.sh # uncomment if required
export LD_PRELOAD=/home/yours/ise-usb-driver/usb-driver/libusb-driver.so
ise # comment if neccessary
#impact # uncomment if neccessary
exit
```

Note 1: Comment, uncomment or modify the line that starts with `source` depending on the ISE version and the system architecture (32/64bit) you are using.

Note 2: If you want to start **Impact** directly (in a **production line** for example), comment out the word `ise` and remove the hash before the word `impact` .

8) Save script file ise-go

9) Close text editor.

10) Create a launcher to the script file ise-go on your desktop.

11) Click on this icon. ISE should start up. Do your license and cable setup in ISE. Your Platform USB II or Parallel IV cable is now ready for use.

8 Thanks to

Michael Gernoth for libusb-driver - a *Jungo windrvr* replacement for XILINX JTAG tools.

http://www.gernoth.net/michael/

9 Disclaimer

This document is believed to be accurate and reliable. I do not assume responsibility for any errors which may appear in this document. I reserve the right to change it at any time without notice, and do not make any commitment to update the information contained herein.

My Boss is a Jewish Carpenter !