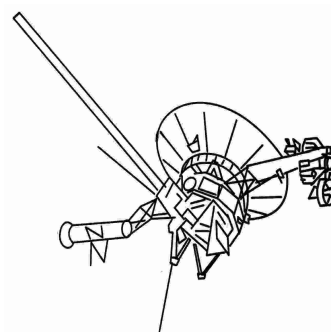


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## How To Install Xilinx ISE + Platform Cable USB II / parallel Drivers on SuSE Linux 11.1

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### Document Version 2.2

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## 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.

There is no special 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](http://www.xilinx.com) .

**The installation described here refers to Open SuSE 11.1 and ISE 10.1 and 11.1.**

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

## 2 ISE Installation

The procedure below applies to ISE 10.1 as well.

- 1) Log in as non-root user.
- 2) Download file “Xilinx\_11.1\_WebPack\_SFD.tar” from [www.xilinx.com](http://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”.
- 10) Follow instructions given by the ISE installation process. When you are asked to install cable drivers, **select** driver installation<sup>1</sup>.

Don't care about the box that informs you about any environment variables required for ISE (see section 3.5 Setting up a Start Up Script for ISE 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.

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<sup>1</sup> This way the firmware files get installed in your system directory /usr/share .

## 3 Cable Driver Installation

### 3.1 Preparation for 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<sup>2</sup>. 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 **rerun** the basic ISE installation and make sure the driver installation **is** selected (see page 2 section 2 action point 10).

- 6) Open a console and type command “`lsusb | grep Xilinx`”. If no driver for the USB cable has been installed so far 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.

- 7) Change to directory `/etc/udev/rules.d/`
- 8) Run command “`touch libusb-driver.rules`”
- 9) Open file “`libusb-driver.rules`” with Kate or other text editor.
- 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) Restart your PC.

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<sup>2</sup> I do not recommend any USB extension cords as they may influence the power supply negatively.

### 3.2 Preparation for Parallel Cable IV<sup>3</sup>

- 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 PC's 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.

---

3 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.

### 3.3 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".

### 3.4 Compiling the driver

**Note:** You do not need any kernel sources to install for this procedure. Steps 10 and 11 do not apply for the Parallel IV Cable.

- 1) Log in as non-root user.
- 2) Open a console and change (cd) to to folder "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) Reboot your PC.
- 11) Watch the LED of the USB cable. It should light up yellow when booting is finished<sup>4</sup>.
- 12) For debugging only: Log in as root, run command "lsusb | grep Xilinx". It should output a line like:

```
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.

---

4 There is no need to start ISE.

### 3.5 Setting up a Start Up Script for ISE

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/11.1/ISE/settings32.sh
export LD_PRELOAD=/home/your_home_directory/usb-driver/libusb-driver.so
ise
#impact
exit
```

**Note 1:** If you use ISE 10.1 change the second line to:

```
source /opt/Xilinx/10.1/ISE/settings32.sh
```

**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 file “ise-go”.
- 9) Close text editor.
- 10) Create a link-icon to the script file “ise-go” on your desktop.
- 11) Click on this icon. ISE should start up. Do your cable setup in ISE. Your Platform USB II or Parallel IV cable is now ready for use.

## 4 Useful Links

- ◆ Further source code and driver information can be found at <http://www.rmdir.de/~michael/xilinx/>
- ◆ Debug SPI, I<sup>2</sup>C, Boundary Scan/JTAG and other hardware with the Logic Scanner at [http://www.train-z.de/logic\\_scanner/index.html](http://www.train-z.de/logic_scanner/index.html)
- ◆ The Free and Open Productivity Suite OpenOffice at <http://www.openoffice.org>
- ◆ EAGLE - an affordable and very efficient schematics and layout tool at <http://www.cadsoftusa.com/>



## 5 Thanks to

Michael Gernoth for libusb-driver - a Jungo windrvr replacement for XILINX JTAG tools.  
<http://www.gernoth.net/michael/>

## 6 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.

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My Boss is a Jewish Carpenter !