An Installation Guide for YDL

A guide for installing Yellow Dog Linux on the Playstation 3.

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This guide is written for development on the Playstation 3 and describes how to install the Cell Broadband Engine FS-Simulaotr on a PC (with FC9). This document was written for the UMCG department Radiology. For this guide the Terra Soft installation-guide was used, which can be found on the Terra Soft website. The guide “Installatie YellowDog Linux en IBM SDK” by Wes Schuitema and Ferdy Hulzebos was also used.

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This guide and many other guides can be downloaded from: http://code.google.com/p/fedora-cell-project/

If you encounter any errors on using this document, please read the inform us via the google-code page or google-group.

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1. Requirements for installation.

Everything you will need for this installation is described in this chapter.

1.1 Minimal Requirements :

- ✓ Playstation 3
- ✓ USB Keyboard/- Mouse
- ✓ Network cable
- ✓ HDTV or Display (HD-Compliant)
- ✓ Yellow Dog distribution (6.0)

1.2 Also recommended:

- ✓ USB-Stick (minimal 10MB of free space).
- ✓ A computer with an internet connection.

2. Preparations

The Playstation has a standard option to install another OS without affecting the Game OS. In the following steps is described how to do this.

1st. In the Playstation GameOS go to System Settings > Format Disk Utility. Notice: If the PS3 is used for gaming as well, it's wise to make a backup of the PS3's game-data.

2nd. In the Format Disk Utility go to Custom and select the option "*Allot 10GB to other OS*". The PS3's hard disk will now be formatted.

3rd. Plug in the USB-Mouse and USB-Keyboard and insert the DVD. Go to System Settings > Install other OS. Your DVD will now be scanned and you should get the message a boot loader has been found. If you get the message "Boot loader not found" or something like that, go to the sub-chapter "*Boot loader not found*".

4th. Select the boot loader and let the PS3 reboot. In the next chapter you will find the steps to install YDL.

2.1 Boot loader not found.

If your PS3 can't find the Boot loader on te USB-Stick, you should do the following steps. We assume that steps one and two are done.

1. Disconnect your mouse and keyboard from the PS3.
2. Insert a the USB-Stick and YDL DVD in a pc.
3. Copy the directory "OtherOS" from the DVD to the USB-Stick
4. Plug the USB-Stick in the PS3 and go to System settings > Install other OS. Your USB stick will now be scanned. When the scanning is complete, a message will pop-up saying a bootloader is found. Install this, but do not reboot when you are asked for.
5. Remove the USB-Stick from the PS3 and plug-in your USB-Keyboard and USB Mouse. Place the YDL DVD in the DVD/BluRay player. Now you can reboot your PS3.

3. Installing Yellow Dog Linux.

For installing Yellow Dog on the PS3, we would like to refer to the documentation of Terra Soft Solutions (The company that created YDL). This documentation can be found in the same directory of this file, or on the following website:

- http://www.terrasoftsolutions.com/support/installation/ydl6.0_ps3_guide.pdf

Before installing, we recommend reading the chapter Tips & Tricks first.

4. Tips and Tricks

The following section of this documents describes some useful tips and tricks.
If you have a problem, you could consult this section.

4.1 Resolution

When your installation of YDL has finished, you can change the resolution by typing

ps3-video-mode

followed by one of the following arguments:

Options:

--help	*-h*	*help menu*
--video	*-v*	*set the video mode ID*
--full	*-f*	*use full screen mode*
--dither	*-d*	*use dither ON mode*

Video mode:

0: Auto mode.

YUV 60Hz	*1:480i*	*2:480p*	*3:720p*	*4:1080i*	*5:1080p*
YUV 50Hz	*6:576i*	*7:576p*	*8:720i*	*9:1080i*	*10:1080p*
RGB 60Hz	*33:280i*	*34:480i*	*35:720p*	*36:1080i*	*37:1080p*
RGB 50Hz	*38:576i*	*39:576p*	*40:720p*	*41:1080i*	*42:1080p*
VESA	*11:WXGA*	*12SXGA*	*13:WUXGA*		

4.2 Window Manager

Because of the low amount of ram (256MB), we recommend using the Enlightenment window manager because of its low use of recourses.

4.3 Packages

During the installation you are asked to install a number of packages. For our installation we choose "*Development Tools*" and the window manager "*Enlightenment*".

5. Installing the IBM SDK for Multicore Acceleration

This chapter describes the installing of IBMSDK on the PS3. This SDK is needed to make it possible to develop on de CBE.

To do this installation its necessary to be logged in as the user "*root*", so you will have all rights. We'll start with creating some folders to download the files to.

1st. browse to the root's home folder

cd /root/

2nd. Create the directories: "*openrpm*", "*cellsdk*" and "*rpms*"

mkdir openrpm
mkdir cellsdk
mkdir rpms

3rd. Go to the folder openrpm

cd openrpm

4th. Download the packages from bsc using the following commando:

wget -1 1 -c -np -nd -r http://www.bsc.es/projects/deepcomputing/linuxoncell
/cellsimulator/sdk3.0/CellSDK-Open-Fedora/cbea / -A .rpm

5th. Install the in the previous downloaded step RPM's:

*rpm -ivh *.rpm --force --nodeps*

When these steps are finished we can continue with the next directory, cellsdk. For this you need to go to the website:

- https://www14.software.ibm.com/webapp/iwm/web/reg/download.do?source=cellsdk&S_PKG=fedora&S_TACT=105AGX16&lang=en_US&cp=UTF-8

We recommend doing this on a normal pc, because the website requires a login. We also provided the files in this file, but those may be outdated.

These file's must be placed in the cellsdk directory.

6th. The last directory: rpms, go to the rpms directory

cd /root/rpms

7th. Download the RPM's using the following commands:

wget http://mirror.anl.gov/pub/yellowdog/yum/6/base/RPMS/compat-libstdc++-33-3.2.3-61.ppc.rpm

wget http://mirror.anl.gov/pub/yellowdog/yum/6/base/RPMS/tcl-8.4.13-3.ppc64.rpm

wget http://mirror.anl.gov/pub/yellowdog/yum/6/base/RPMS/tcl-devel-8.4.13-3.ppc64.rpm

wget http://mirror.anl.gov/pub/yellowdog/yum/6/base/RPMS/tk-8.4.13-3.ppc64.rpm

wget http://mirror.anl.gov/pub/yellowdog/yum/6/base/RPMS/tk-devel-8.4.13-3.ppc64.rpm

wget ftp://ftp.muug.mb.ca/mirror/fedora/linux/releases/9/Everything/x86_64/os/Packages/compat-expat1-1.95.8-4.x86_64.rpm

8th. For samba support you should download the following packages:

wget http://mirror.anl.gov/pub/yellowdog/yum/6/base/RPMS/samba-common-3.0.23c-2.ppc.rpm

wget http://mirror.anl.gov/pub/yellowdog/yum/6/base/RPMS/samba-3.0.23c-2.ppc.rpm

9th. When the downloading of these packages has finished, you can install them using the command:

*rpm -ivh *.rpm --force –nodeps*

Now all the dependencies and libraries are installed, we can start installing the IMB Cell SDK.

10th. Go to the folder you downloaded the cell iso's to:

cd /root/cellsdk

11th. Run the RPM file located in this directory.

*rpm -ivh *.rpm*

12th. When this has finished, go to the cell installation directory:

cd /opt/cell

13th. Run the automatic installation provided by IBM:

./cellsdk --iso /root/cellsdk install

After this installation has completed, your IBM SDK is ready to use. If this installer returns an error while installing, it's also possible to do install this SDK manually:

cd /tmp/CellSDK-Extras-Fedora_3.0.0.1.0/cbea

*rpm –ivh *.rpm –-force –-nodeps*

cd ../CellSDK-Devel-Fedora_3.0.0.1.0/cbea

*rpm –ivh *.rpm –-force –-nodeps*

You can check if the installation was successful by going to the folder /opt/cell/sdk/ and check if the folders buildutils, docs, src and usr are in there, you can do this with the following commands:

cd /opt/cell/sdk/

ls

Have fun programming on the CBE™!