Petalinux + SDSoC
v2016.2

Install, set up and solve problems guide

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Quick start guide for Petalinux + SDSoC v2016.2

It's highly recomended read all before working in this.

Previous:

- – Vivado suite v2016.2 install in your computer.
- – If you are working on Windows: install petalinux in a virtual.
  machine and create shared folder to pass files. I recomended 60GB.
- – If you don't have the Linux OS language in United States English
  you have to set up your Linux OS to US english, because there is a
  problem with enviromental variables from petalinux and linux, and
  this is the easiest solution.
- – You need a custom platform how it is explain at Xilix guide ug1146
  chapter2

If you don't have a custom platform, you can use this for learn:
https://github.com/raulrbugr/Zybo_hdmi_in_v2016.2

When you have vivado suite installed, go to install Petalinux.

You must install the same version at Vivado suite, in this case: v2016.2

Go to ug1144 v2016.2 guide:

-Pages 10,11: packages that you need have install in your OS.
-Page 12: steps to install and path.

If you have all installed well, execute this:

```
source <path-to-installed-PetaLinux>/settings.sh
probably the path is  /opt/pkg/petalinux-v2016.2-final/
```

This charge Petalinux's enviroment.
You have to execute this ever that you have to work with Petalinux. When
you close Terminal or shut down the OS

If you are working whith Windows + Linux MV is the moment to set up the shared folder.

At this time you have all the enviroment installed.

Now we are going to make more interesting things:

It is recommended that the Vivado project and Petalinux project have the same path. The large paths are bad for Petalinux scripts.

NOT WORK OVER SHARED FOLDERS, LIKE DROPBOX OR SIMILAR.

Now execute this to enter Petalinux enviroment:

```
source <path-to-installed-PetaLinux>/settings.sh
```

Create petalinux project (info xilinx guide ug1144 v2016.2 page 23):

```
petalinux-create --type project --template <board> --name <project name>
```

in my case board is zynq:

```
petalinux-create --type project --template zynq --name projectname
```

Enter in petalinux project folder:

```
cd projectname
```

We have to indicate the path to our .hdf file from vivado project (there is in *.sdk folder from vivado's project). When Petalinux shows the menu set up the things how explain in page 25 to ug1144 v2016.2 guide.

petalinux-config –get-hw-description=Path hasta .sdk

Example:

petalinux-config –get-hw-description=/home/raul/Desktop/zybo_hdmi_in/vivado/zybo_hdmi_in.sdk

Build it:
petalinux-buid

Make uImage:
petalinux-package --image -c kernel --format uImage

When all were complete, go into petalinux's project: /images/linux
there are the files that you need for uses vivado custom platform with
embedded linux.

You have to put those files in the /boot folder in vivados project, because
when you build the project in SDSoC, it takes the necessary files to run the
aplication.

Petalinux user and password: root/root

The aplication.elf path is:
/run/media/mmcblk0p1/

Congratulations, you have an embedded petalinux for your vivado custom
platform and build it with SDSoC.

Appendix. Errors and how to fix its

- if petalinux-build has errors, look the necessary packages and the OS
  language must be in US english
- If petalinux-package --image -c kernel --format uImage   give you
  this error:

you have to do this:

Whe can have this error in Ubuntu because it uses dash console not bash. If you get one error more doing this execute sudo rm sh and execute the last line (sudo ln -s bash sh).

– If you get this error, put the image.ub in the SD card.

```
Hit any key to stop autoboot:  0
Device: sdhci@e0100000
Manufacturer ID: 41
OEM: 3432
Name: SD8GB
Tran Speed: 50000000
Rd Block Len: 512
SD version 3.0
High Capacity: Yes
Capacity: 7.2 GiB
Bus Width: 4-bit
Erase Group Size: 512 Bytes
reading image.ub
** Unable to read file image.ub **
U-Boot-PetaLinux> █
```

– If you have an error when you execute the aplication.elf that say something like (don't exists file or directory) you have to build linux when you are doing this with the libstdc++6 library, you can read about this in the ug1146 v2016.2 guide page 25.

Interesting links

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