Enabling the low latency kernel and core isolation

–>Download the Xilinx linux kernel source at <petalinux-root>/components/
git clone https://github.com/Xilinx/linux-xlnx.git

Go to linux-xilinx
 git checkout xlnx_rebase_v4.19

Get the appropriate linux-rt patch version for your kernel from
https://www.kernel.org/pub/linux/kernel/projects/rt/
-Patches for older kernel revisions can be found in the older/ directory

4.19 patch for peta 2019
4.13 for 2018
(see the kernel version of petalinux)

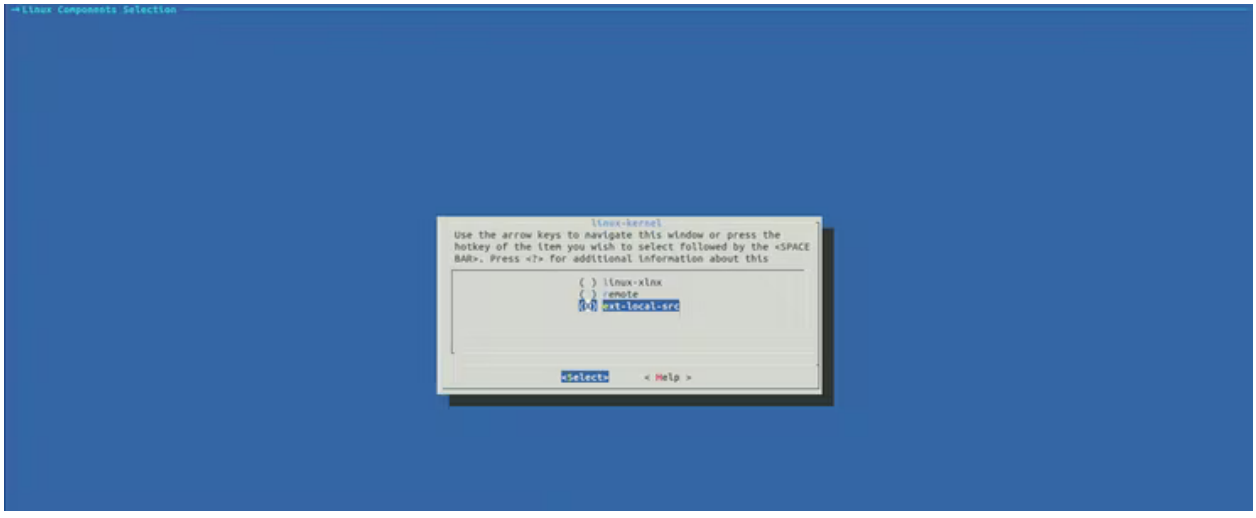
$ cd linux-kernel
$ zcat ../*.patch.gz | patch -p1

Create peta linux project

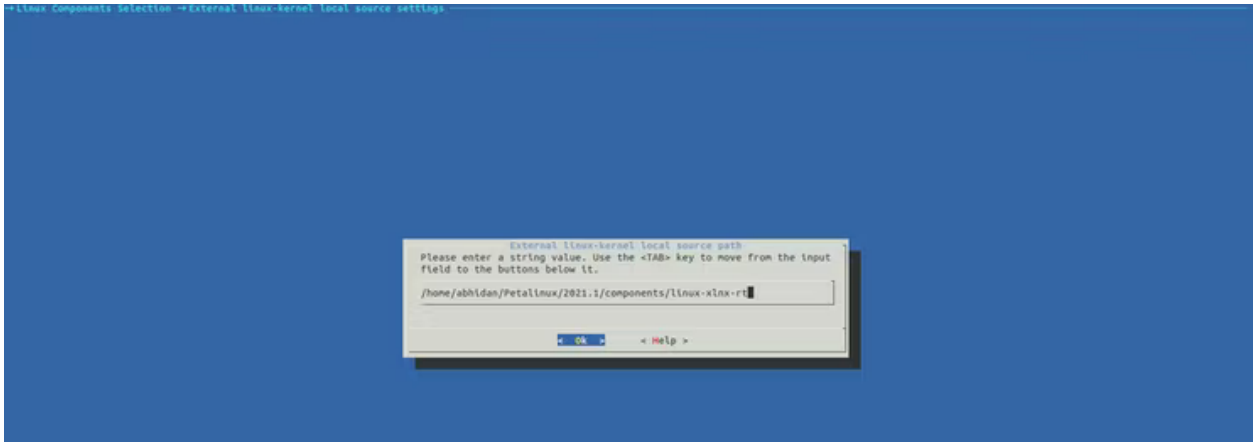
$ petalinux-config

Go to Components Selection -> linux-kernel
 and change option from linux-xlnx to ext-local-src

Go to Components Selection-> External linux-kernel local source settings-> External linux-kernel local source path



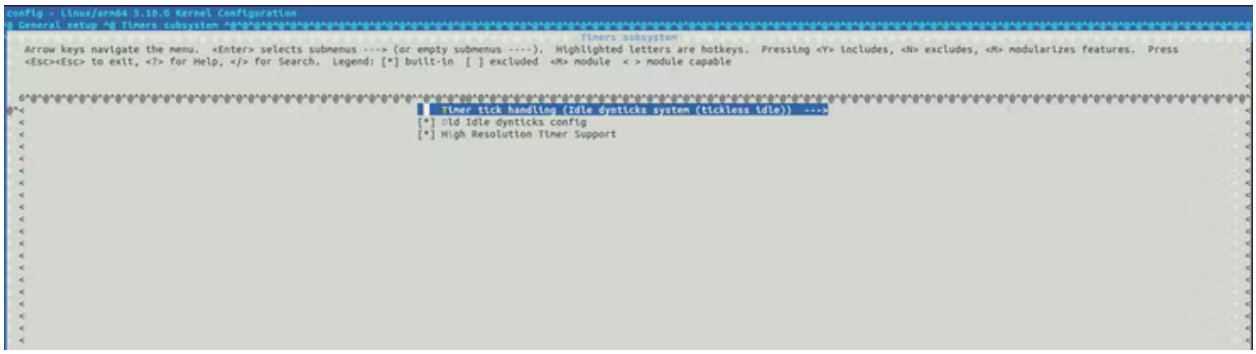
And add the path



Save and exit

petalinux-config -c kernel

Go toGeneral setup -> Timers subsystemand
make sure the "High Resolution Timer Support"



Enable preempt_rt (low latency kernel for our hdf)

Go to Kernel Features -> select Timer frequency
and set it to 1000 Hz

Go back to the main menu and select--> CPU power ManagementDisable the CPU frequency scaling
Save the configuration and exit from the program
Now next build the petalinux project

For core isolation,include following line system-user.dtsi file.

Isolcpus = 3 (3 will be isolated , 1-3 (1 to 3 will be isolated ,1,2 (1 and 2 be isolated))

setenv bootargs 'console=ttyPS0,115200n8 root=/dev/mmcblk0p2 rw rootfstype=ext4 rootwait earlycon clk_ignore_unused uio_pdrv_genirq.of_id=generic-uio cpuidle.off=1 isolcpus=3 maxcpus=4'

To see isolated r not

cat /sys/devices/system/cpu/isolated