



Desktop environment on ZynqMP Ultrascale96

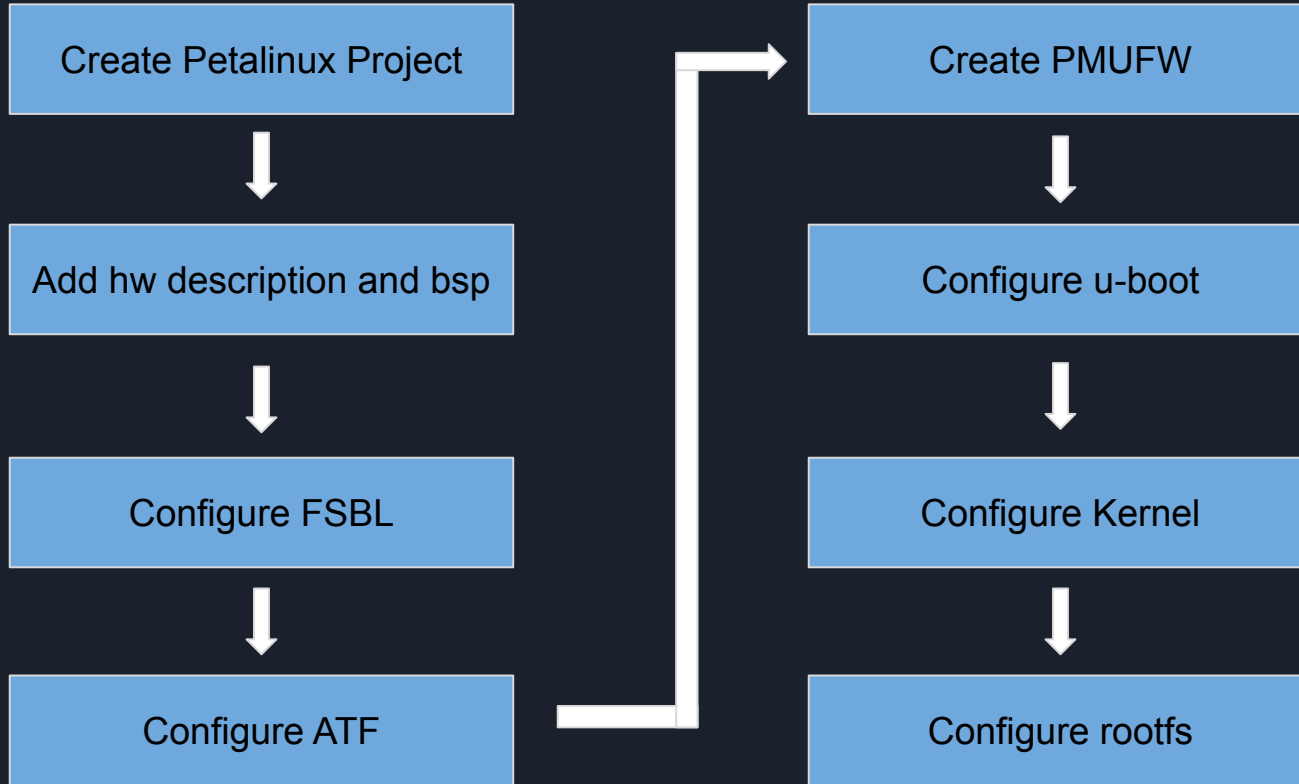
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Problem Statement

- Create a desktop environment on the Ultra96 board.
- Add applications to make the system useful.



Creating a Linux Image





Creating a Linux Image

- Edited from U-boot and onward from flow chart.
- U-Boot
 - Enabled Display Port and Mali Graphics.
- Kernal
 - Enabled Drivers for Keyboard, Mali Processor, and Mice.
 - Specified Mice with 1920x1080 resolution.
- Rootfs
 - Mali
 - X11
 - Gcc
 - Vim
 - Python
 - Kmod
 - Wpa-supPLICant
 - qemu

<https://xilinx-wiki.atlassian.net/wiki/spaces/A/pages/2615508993/PetaLinux+Package+Groups+-+2023.1+Release>

<https://www.hackster.io/whitney-knitter/create-a-desktop-environment-for-the-te0802-using-petalinux-821ee8>

Key Results - Setback

- hardware compatibility.
 - Used a new monitor for testing at first.
- Display Port not accessible through PL logic.
- Chromium is not supported in newer kernel versions.
- Wifi Package does not include WILC.





Key Results - applications

Working Elements

- pm/dm
- Qemu
- ethernet works (wget)
- Aliases
- gcc
- Python

Future Elements

- are some ways to get Firefox/chromium
- Wifi module with WILC
- Dynamic major and minor numbers
- New version of Petalinux



Key Result - Pros/Cons

- Pros

- Have the capability to work on the board without a computer.
- Very lightweight.

- Cons

- Very difficult to get applications that are not in the petalinux packages.
- Need an older monitor to work with the board.



Different Actions

- Have our own Linux Machine(burning SD card).
- Could have made wifi work with more thorough research.
 - Checked compatible monitors.
 - But worked with all aspects of petalinux(recipes, dtsi, and dtb nodes).



Questions?