

# Build Petalinux 2021.1 and BSP

首先需要的環境有

1. Ubuntu 18.04/20.04
2. [PetaLinux Tools - Installer - 2021.1](#)

建置開始

## ◆ Step 1:

下載完 PetaLinux Tools - Installer 後

安裝 Dependencies

```
<command> sudo apt-get install gcc g++ libncurses5-dev libncursesw5-dev libtool net-tools autoconf xterm texinfo gcc-multilib gawk zlib1g libz1:i386 zlib1g-dev build-essential libtinfo5
```

```
<command> ./petalinux-v2021.1-final-installer.run -d <自訂安裝的路徑>
```

- 不能執行請先 `sudo chmod -R 777`

```
<command> source <自訂安裝的路徑>/settings.sh
```

以上便安裝完 PetaLinux Tools 與設定好環境變數

有時候同個版本像是 petalinux 2021.1 有 update 1，有加入新的 Vitis ai layers，會影響到使用，因此會建議更新 petalinux tool

---> From Network:

```
<command> petalinux-upgrade -u http://petalinux.xilinx.com/sswreleases/rel-v2021/sdkupdate/2021.1_update1/ -p "aarch64" --wget-args "--wait 1 -nH --cut-dirs=4"
```

---> From Local:

```
<command> petalinux-upgrade -f <Local eSDK Directory Path> -p "aarch64"
```

## ◆ Step 2: 創建 petalinux project

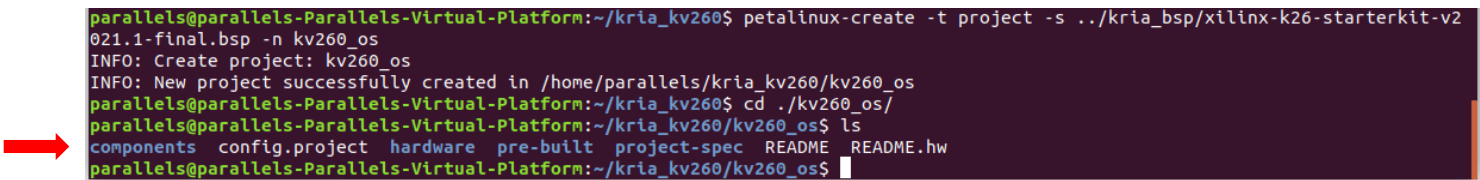
有 BSP 檔案下：

```
<command> petalinux-create -t project -s /<放 BSP 的路徑>/***.bsp -n
```

proj\_name (此為專案名稱與資料夾)

```
<command> cd ./proj_name
```

```
<command> ls 後可看見下圖：
```



```
parallels@parallels-Parallels-Virtual-Platform:~/kria_kv260$ petalinux-create -t project -s ../kria_bsp/xilinx-k26-starterkit-v2
021.1-final.bsp -n kv260_os
INFO: Create project: kv260_os
INFO: New project successfully created in /home/parallels/kria_kv260/kv260_os
parallels@parallels-Parallels-Virtual-Platform:~/kria_kv260$ cd ./kv260_os/
parallels@parallels-Parallels-Virtual-Platform:~/kria_kv260/kv260_os$ ls
components  config.project  hardware  pre-built  project-spec  README  README.hw
parallels@parallels-Parallels-Virtual-Platform:~/kria_kv260/kv260_os$
```

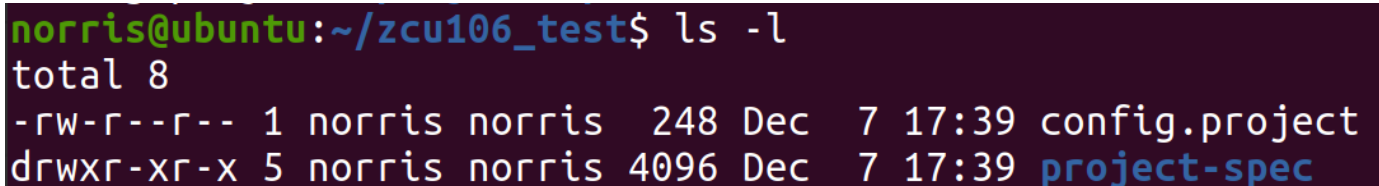
無 BSP 檔案下：

**<command>** petalinux-create --type project --template <PLATFORM> --name <PROJECT\_NAME>

--template <PLATFORM> - The following platform types are supported:

- zynqMP (for Zynq UltraScale+ MPSoC)
- zynq (for Zynq-7000 devices)
- microblaze (for MicroBlaze™ processor)

Note: The MicroBlaze option cannot be used along with Zynq-7000 devices or Zynq UltraScale+ designs in the Programmable Logic (PL)



```
norris@ubuntu:~/zcu106_test$ ls -l
total 8
-rw-r--r-- 1 norris norris 248 Dec 7 17:39 config.project
drwxr-xr-x 5 norris norris 4096 Dec 7 17:39 project-spec
```

◆ Step 3: Import XSA

**<command>** petalinux-config --get-hw-description <XSA Directory>

◆ Step 4: Build Petalinux Image

**<command>** petalinux-build

◆ Step 5-1: Create SD Card Image

**<command>** petalinux-package --boot --u-boot --dtb images/linux/u-boot.dtb --force

**<command>** petalinux-package -wic

◆ Step 5-2: Package Image to single BSP File

**<command>** petalinux-package --bsp -p <plnx-proj-root> --output <name of bsp>

Or

**<command>** petalinux-package --bsp -p <petalinux\_project\_path> --hwsourc=<vivado\_project\_path> --output <name of bsp> --force

◆ Step 6: 使用 balenaEtcher 燒錄至 SD 卡