**OSP-Lab1-Study-B0521229**

**Things should be kept in mind**

1. **Download Files**

* Root privilege : su=>change to root(It’s an important setting between PC and Lab board connection)
* chmod +x mkimage (change makefile to execution file)

1. **Prepare the compile environment**

* Set Path: for every terminal session, before you compile the kernel (also the “su” privilege command)

1. **Build the Linux Kernel**

* Set the kernel configuration: make omap\_osk\_5912\_defconfig

1. **Check Point1**

* Notice that the kernel and root file system are on your PC, not on the Lab board

1. **Set the Network Services**

* Set the TFTP Service(下載root file system):讓Linux Kernel compiled on your PC可以被下載到Lab board
* Systemctl start and enable tftp.socket
* Set the NFS service(要把根目錄分享給實驗板做掛載): Share folder(tmp /rootfs2.6…..) with Lab board via Network
* 根目錄會預先放在電腦裡(windows C槽)，不會先燒進實驗板裡且在PC上做編譯開發 對實驗板來說，是遠端掛載一個資料夾，該資料夾在PC上面，實驗板可以直接存取(via network)

1. **Test the Network Services**

* 系統實驗分段測試 => Good for debugging=>先測試在PC端無異樣
* 各組互相測試 :

1.TFTP client side cat:“Filename”把剛剛下載的檔案顯示在螢幕上 => check file on server is correct

2.NFS client side mount –t nfs “Server IP” =>把我共享之資料夾掛載在其本地端資料夾新增檔案也可在本地端看到這些操作=>umount 移除掛載、否則有同步問題

1. **Check Point 2**

* 組別互相確認”server side”有無成功架設

1. **Set the Minicom**

* 實驗板連到PC做下載執行
* 透過serial port在PC與Lab board做溝通媒介=>minicom
* Modem and dialing setting
* Seve setup as dfl then exit
* Start and Quit minicom 1.Start minicom 2.CTRL+A→Q

1. **Prepare for the Booting**

* 把剛才編出來的Kernel放在TFTP可以下載資料的資料夾底下=>/var/lib/tftpboot/uImage(映像檔)
* 接到最底下的Serial Port:ttys0
* RJ45 Jumper line(網路線)=>對稱對調之網路線(輸出輸入對調)因PC跟實驗板之間沒有hub

1. **Boot the Evaluation Board**

* Reset icon on Lab board and press any key continually on minicom=>中斷預設開機流程

1. **Download the New Kernel**

* Set the boot configuration=>copy paste is advised (因為無上下左右鍵，避免bugs)
* 1.Set ipaddr .......(別跟原PC同) 2.ethaddr =>實驗板網路卡上之標籤 3.

printenv=>double check the setting 4.saveenv=>燒到實驗板ROM裡面

1. Boot the new Kernel and Mount the NFS Root Filesystem

* Download the kernel(在minicom上面打指令) tftpboot 0x10000000(實驗板DRAM) 並把uImage檔案下載到此
* Boot the OS=> bootm(映像檔在記憶體裡而非硬碟)從記憶體0x10000000位置找出映像檔做開機