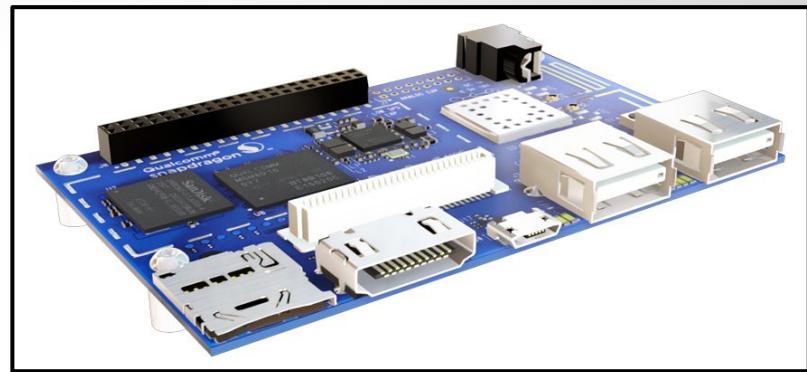


# **Lesson 1**

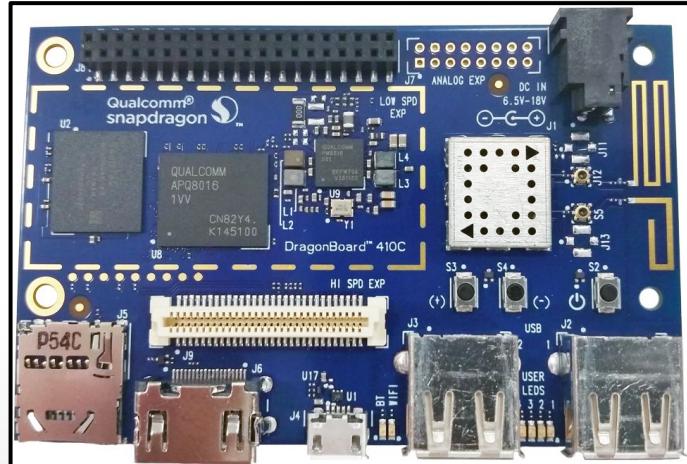
Choosing the Right OS for your  
DragonBoard™ 410c

# **Lesson 1 | Lesson 1 | Choosing the Right OS for your DragonBoard™ 410c**

**1 - Android for DragonBoard™ 410c**



**2 - Ubuntu for DragonBoard™ 410c**



**3 - Methods of Installation**

# 1 - Android for DragonBoard™ 410c

# 1 | Android for DragonBoard™ 410c

- Pros
  - Familiar OS (found in mobile devices)
  - Only need to know Java
  - Access to various Dragonboard™ 410c components through the SDK
- Cons
  - Lost control and versatility



## 2 - Ubuntu for DragonBoard™ 410c

## 2 | Ubuntu for DragonBoard™ 410c

- Pros
  - OS is for Desktops and Servers
  - Versatile / Wide range of possibilities
  - Not limited to a single programming language / tool
- Cons
  - No standards resulting in more work for simple tasks

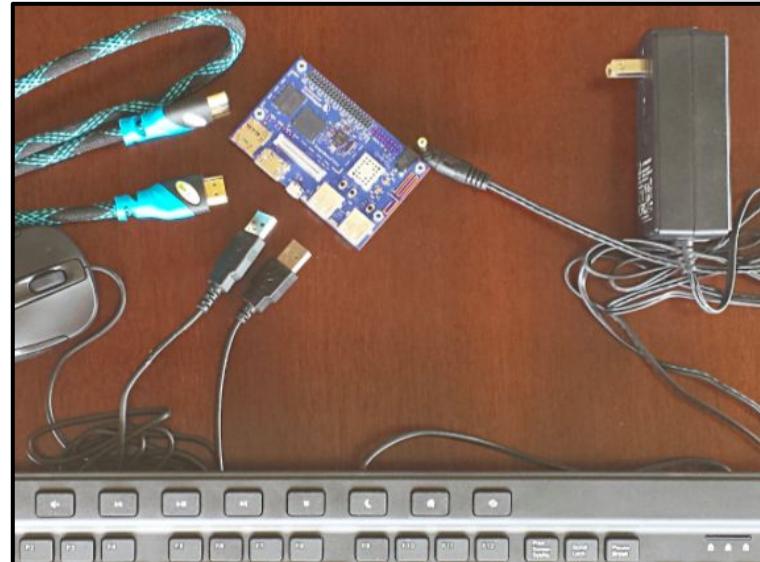


## 3 - Methods of Installation

# 3 | Methods of Installation

- SD Card (Easy)
  - Mac/ Linux: Lesson 2a, 2b
  - Windows: Lesson 3a, 3b
- Fastboot (Difficult)
  - Mac/ Linux: Lesson 2c, 2d
  - Windows: Lesson 3c, 3d

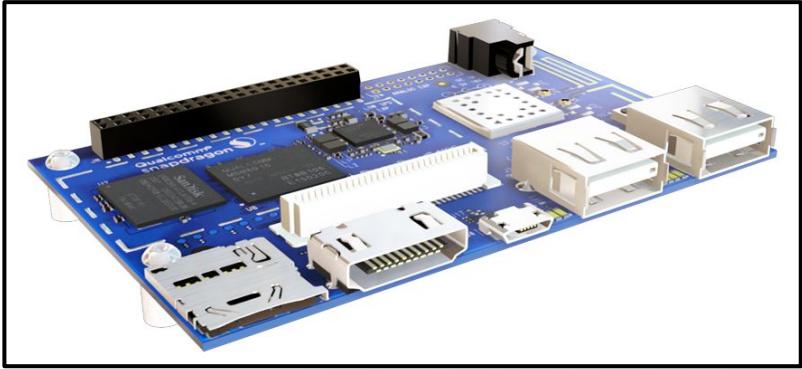
a + c = Android  
b + d = Ubuntu



# Lesson 1 | Summary + A Look Back

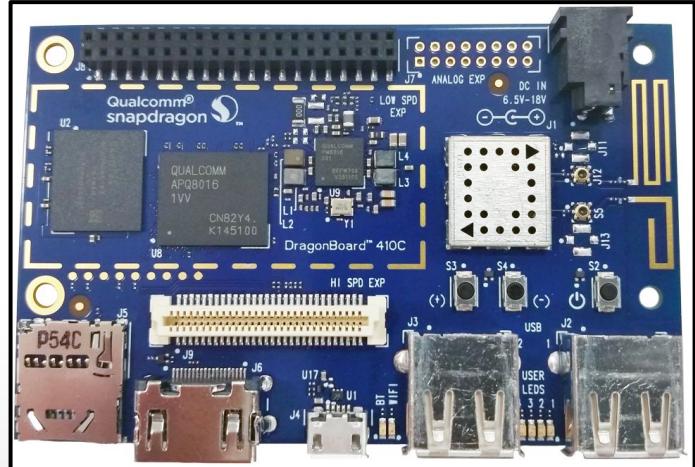
## 1 - Android for DragonBoard™ 410c

- Requires only Java
- Extensive SDK
- Lack of control and versatility



## 2 - Ubuntu for DragonBoard™ 410c

- Allows no limits on development
- No restriction on Programming Language/ Tools
- More work required



## 3 - Methods of Installation

- SD Card (Easy)
- Fastboot (Difficult)
- Difference between DOS and UNIX

# **Lesson 2a**

Flashing Android using SD card (Mac/Linux)

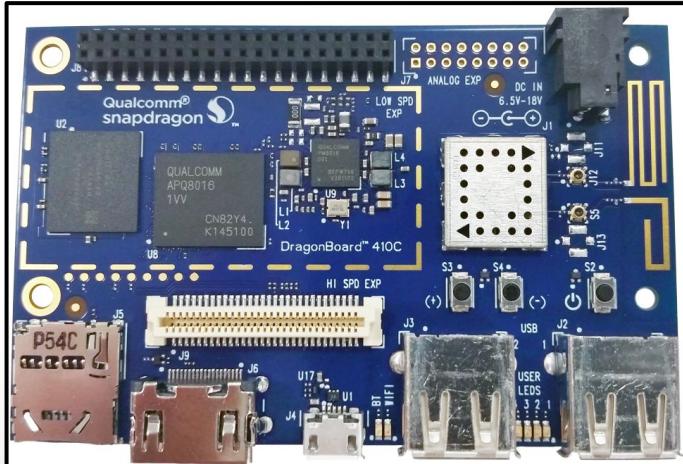
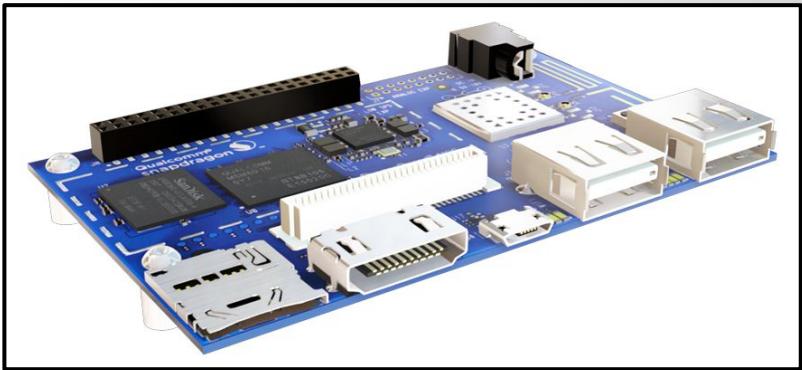
# Lesson 2a | Flushing Android using SD card (Mac/Linux)

1 - Download Android Image

2 - Create Path Variable to Android Image

3 - Flash microSD card with Image

4 - Install Android on DragonBoard™ 410c



# 1 - Download Android Image

# 1 | Downloading Android Image

Screencast

## 2 - Create Path Variable to Android Image

## 2 | Create Path Variable to Android Image

- `export SDKPATH=/Users/User/Development/android/sdk`
- `export ANDROIDBINARES=/Users/User/Documents/Inforce-  
IFC6410_AndroidBP_880233_Relv3.0/IFC6410_AndroidBSP_880233_Relv3.  
0/binaries`
- `echo $SDKPATH....`

Screencast

## 3 - Flash microSD Card with Image

### 3 | Flash microSD Card with Image

Screencast

## 4 - Install Android on your DragonBoard™ 410c

## 4 | Install Android on DragonBoard™ 410c

- 

Screencast

# Lesson 2a | Summary + A Look Back

## 1 - Download Android Image

- Go to 96boards.org
- Pick Android version

## 2 - Create Path Variable to Android Image

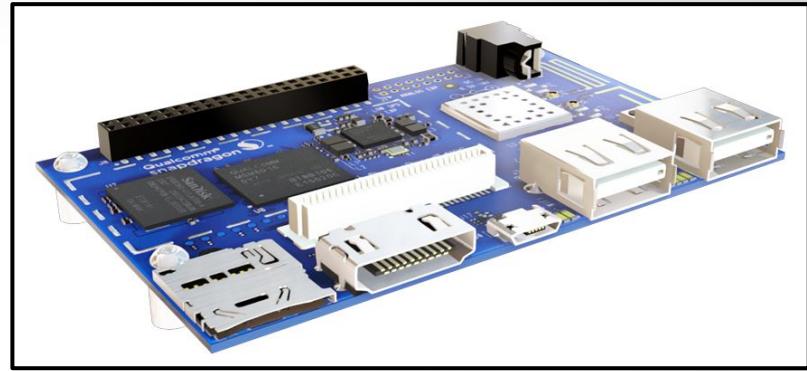
- export VARIABLE=path/to/images
- echo \$VARIABLE

## 3 - Flash MicroSD card with Image

- dd if=/image/ of=/sdcard/
- sync

## 4 - Install Android on DragonBoard™ 410c

- Insert microSD into DragonBoard
- Follow on screen instructions



# **Lesson 2b**

Flashing Ubuntu using SD card (Mac/Linux)

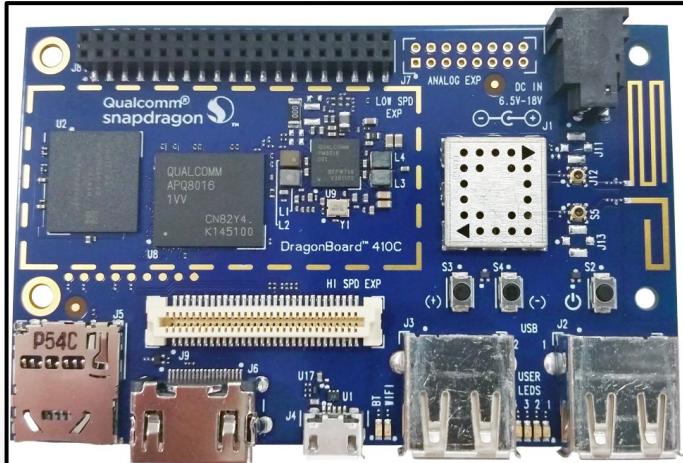
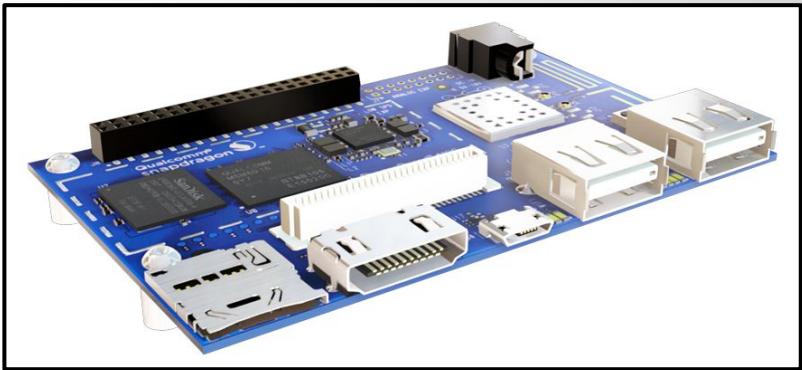
# Lesson 2b | Flashing Ubuntu using SD card (Mac/Linux)

1 - Download Ubuntu Image

2 - Create Path Variable to Ubuntu Image

3 - Flash microSD Card with Image

4 - Install Ubuntu on DragonBoard™ 410c



# 1 - Download Ubuntu Image

# 1 | Downloading Ubuntu Image

Screencast

## 2 - Create Path Variable to Ubuntu Image

## 2 | Create Path Variable to Ubuntu Image

Screencast

## 3 - Flash microSD Card with Image

# 3 | Flash microSD Card with Image

Screencast

## 4 - Install Ubuntu on DragonBoard™ 410c

# 4 | Install Ubuntu on DragonBoard™ 410c

Screencast

# Lesson 2b | Summary + A Look back

## 1 - Download Ubuntu Image

- Go to 96boards.org
- Choose Ubuntu version

## 2 - Create Path Variable to Ubuntu Image

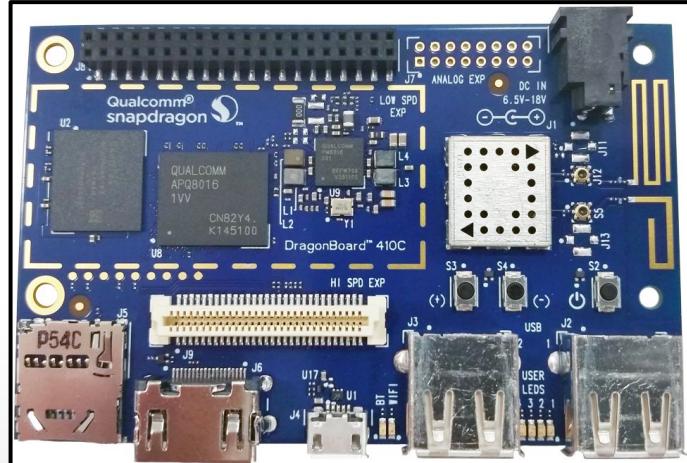
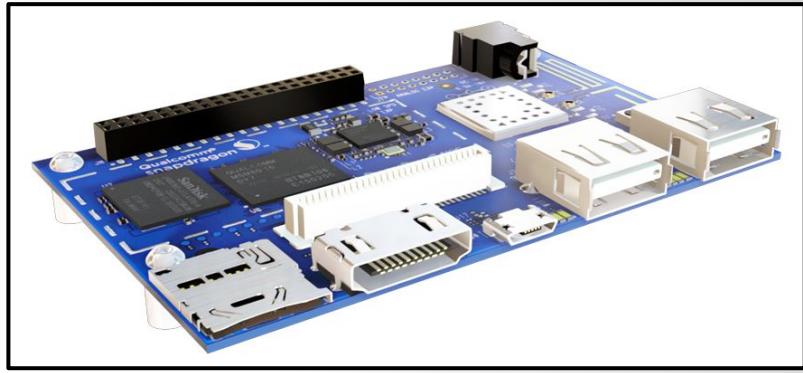
- export VARIABLE=path/to/images
- echo \$VARIABLE

## 3 - Flash microSD card with Image

- dd if=/image/ of=/sdcard/
- sync

## 4 - Install Ubuntu on DragonBoard™ 410c

- Insert microSD into DragonBoard
- Follow on screen instructions

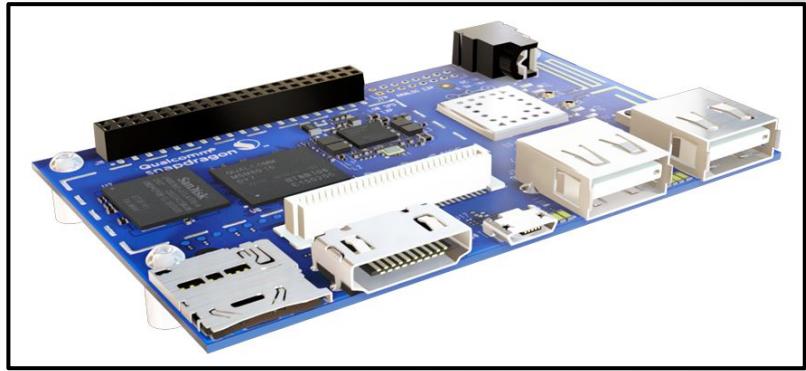


# **Lesson 2c**

Flashing Android using Fastboot (Mac/Linux)

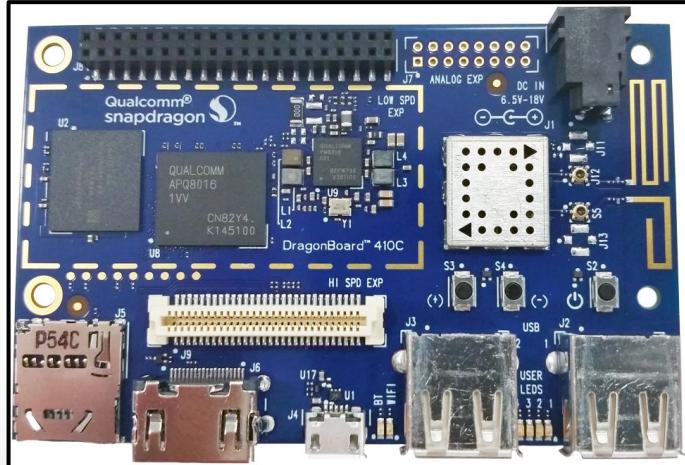
# Lesson 2c | Flashing Android using Fastboot (Mac/Linux)

1 - Download Android binaries/bootloader



2 - Alter bootloader script

3 - Fastboot Flash onto eMMC



# 1 - Download Android binaries/bootloader

# 1 | Downloading Android binaries/bootloader

Screencast

## 2 - Alter bootloader script

## 2 | Create Path Variables to Android binaries/bootloader

Screencast

## 3 - Fastboot Flash onto eMMC

# 3 | Fastboot Flash onto eMMC

1. Download bootloader
2. Flash bootloader (cd into bootloader zip file and then sudo ./flashall)

- ***./fastboot flash boot \$ANDROIDBINARIES/boot.img***
- ***./fastboot flash recovery \$ANDROIDBINARIES/recovery.img***
- ***./fastboot flash system \$ANDROIDBINARIES/system.img***
- ***./fastboot flash persist \$ANDROIDBINARIES/persist.img***
- ***./fastboot flash cache \$ANDROIDBINARIES/cache.img***
- ***./fastboot flash userdata \$ANDROIDBINARIES/userdata.img***
- ***./fastboot reboot***

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OR

```
for f in *.tar.xz; do tar xJf $f; done
sudo fastboot flash boot boot.img
sudo fastboot flash system system.img
sudo fastboot flash userdata userdata.img
sudo fastboot flash recovery recovery.img
sudo fastboot flash persist persist.img
sudo fastboot flash cache cache.img
```

# Lesson 2c | Summary + A Look Back

## 1 - Download Android binaries/bootloader

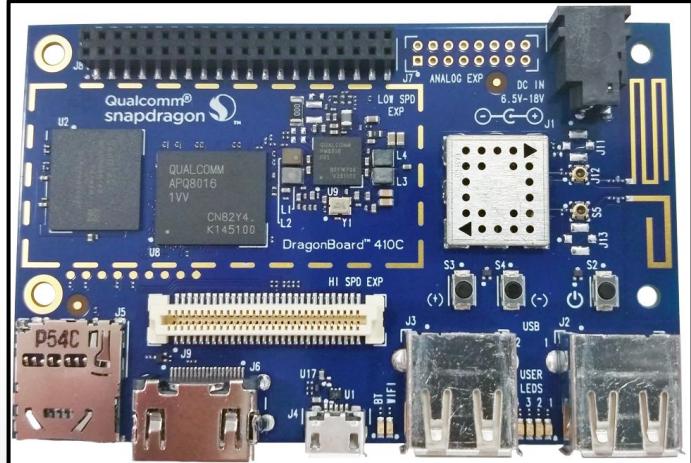
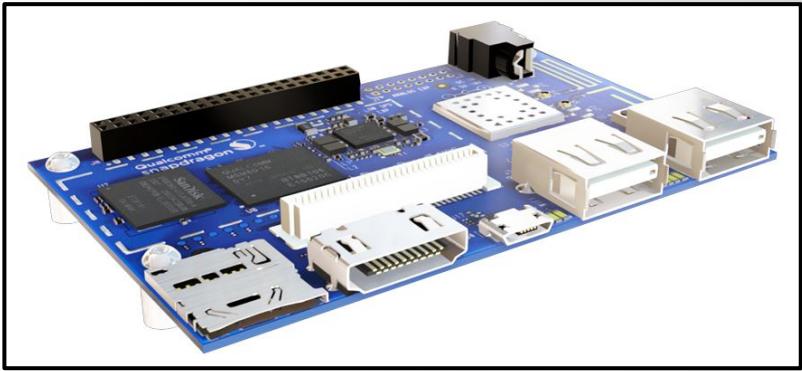
- Go to 96boards.org
- Download Android bootloader
- Download Android binaries

## 2 - Alter bootloader script

- export VARIABLE=path/to/fastboot
- Replace fastboot with \$VARIABLE

## 3 - Fastboot Flash onto eMMC

- Connect usb to Dragonboard™ 410c
- Flash onto board with script

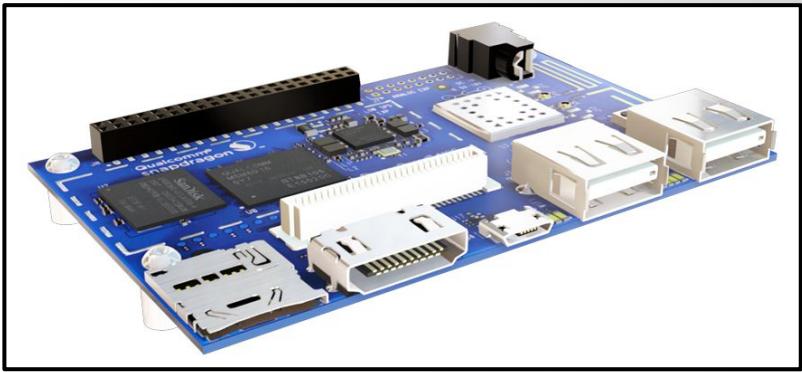


# **Lesson 2d**

Flashing Ubuntu using Fastboot (Mac/Linux)

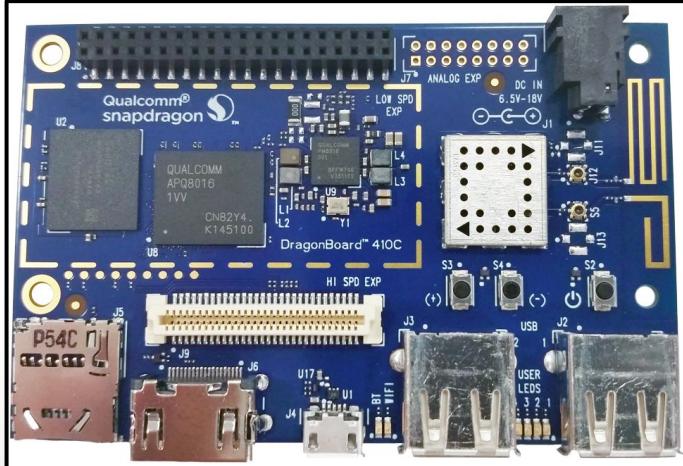
# Lesson 2d | Flashing Ubuntu using Fastboot (Mac/Linux)

1 - Download Ubuntu  
binaries/bootloader



2 - Alter bootloader script

3 - Fastboot Flash onto eMMC



# 1 - Download Ubuntu binaries/bootloader

# 1 | Downloading Ubuntu binaries/bootloader

SCREENCAST

## 2 - Alter bootloader script

## 2 | Create Path Variable to binaries/bootloader

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## 3 - Fastboot Flash onto eMMC

# 3 | Fastboot Flash onto eMMC

## Screencast

1. extract the bootloader
2. cd into directory of bootloader
3. sudo ./flashall (will install bootloader into db410c)

Flash Linaro:

SCREENCAST

1. Download boot image and root File System RootFS
2. cd directory of root image and rootfs
3. unzip the .gz
4. issue commands

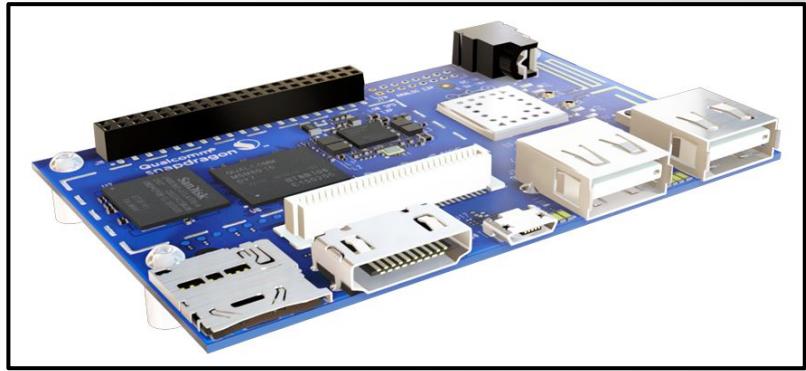
```
sudo fastboot flash boot boot-linaro-vivid-qcom-snapdragon-arm64-BUILD#.img
```

```
sudo fastboot flash rootfs linaro-vivid-developer-qcom-snapdragon-arm64-BUILD#.img
```

# Lesson 2d | Summary + A Look Back

## 1 - Download Ubuntu binaries/bootloader

- Go to 96Boards.org
- Download Ubuntu bootloader
- Download Ubuntu binaries

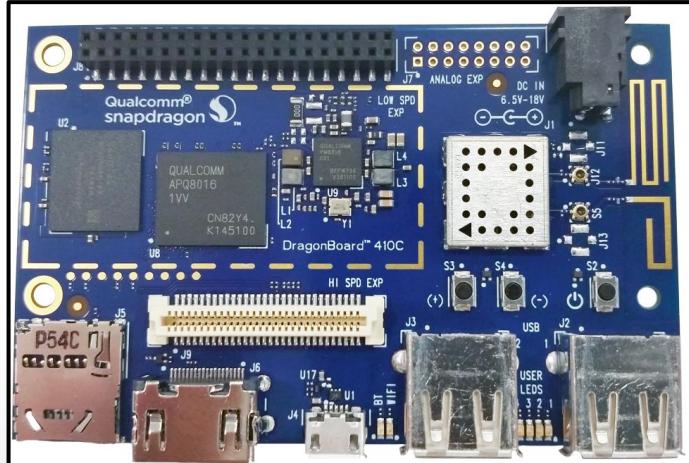


## 2 - Alter bootloader script

- export VARIABLE=path/to/fastboot
- replace fastboot with \$VARIABLE

## 3 - Fastboot Flash onto eMMC

- Connect usb to Dragonboard™ 410c
- Switch boot to SD Boot
- Flash onto board with fastboot

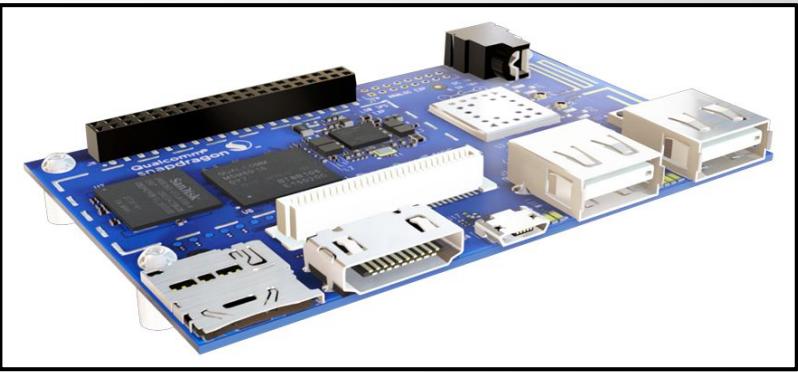


# **Lesson 3a**

Flashing Android using SD card (Windows)

# Lesson 3a | Flashing Android using SD card (Windows)

1 - Download Android Image



2 - Download win32diskimager

3 - Flash microSD Card with Image

4 - Install Android on  
DragonBoard™ 410c



# 1 - Download Android Image

# 1 | Downloading Android Image

Screencast

## 2 - Download win32diskimager

## 2 | Downloading win32diskimager

Screencast

## 3 - Flash microSD Card with Image

# 3 | Flash microSD Card with Image

Screencast

## 4 - Install Android on DragonBoard™ 410c

# 4 | Install Android on DragonBoard™ 410c

Screencast

# Lesson 3a | Summary + A Look Back

## 1 - Download Android image

- Go to 96boards.org
- Pick Android version

## 2 - Download win32diskimager

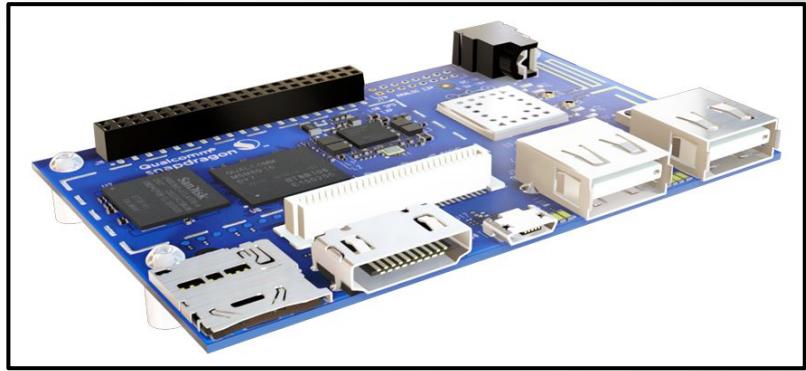
- Download win32diskimager

## 3 - Flash microSD Card with Image

- Using win32diskimager

## 4 - Install Android on DragonBoard™ 410c

- Insert microSD into Dragonboard™ 410c
- Follow on screen instructions

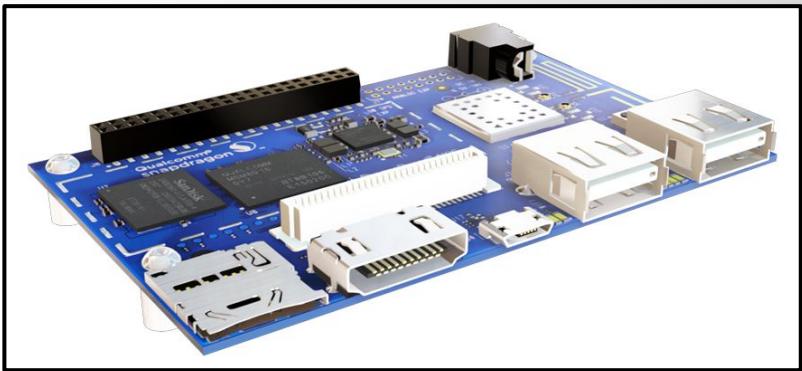


# **Lesson 3b**

Flashing Ubuntu using SD card (Windows)

# Lesson 3b | Flashing Ubuntu using SD card (Windows)

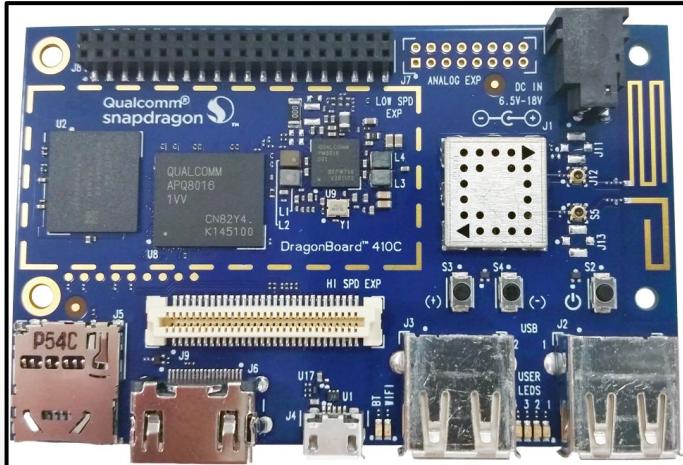
1 - Download Ubuntu Image



2 - Download win32diskimager

3 - Flash microSD Card with Image

4 - Install Ubuntu on  
DragonBoard™ 410c



# 1 - Download Ubuntu Image

# 1 | Downloading Ubuntu Image

Screencast

## 2 - Download win32diskimager

## 2 | Downloading win32diskimager

Screencast

## 3 - Flash microSD Card with Image

# 3 | Flashing microSD Card with Image

Screencast

## 4 - Install Ubuntu on DragonBoard™ 410c

# 4 | Install Ubuntu on DragonBoard™ 410c

Screencast

# Lesson 3b | Summary + A Look Back

## 1 - Download Ubuntu Image

- Go to 96boards.org
- Pick Ubuntu version

## 2 - Download win32diskimager

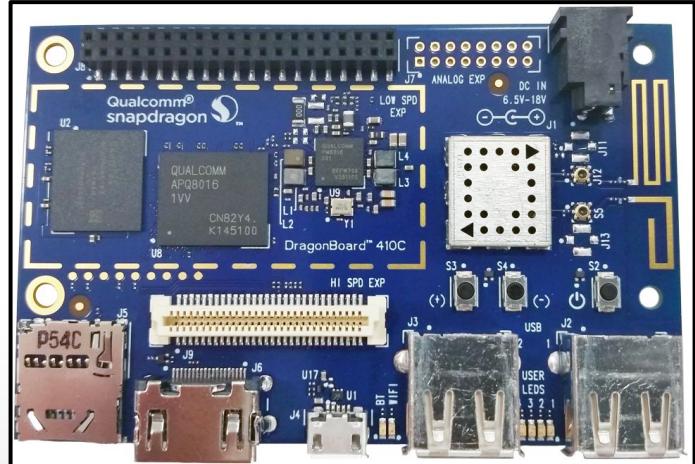
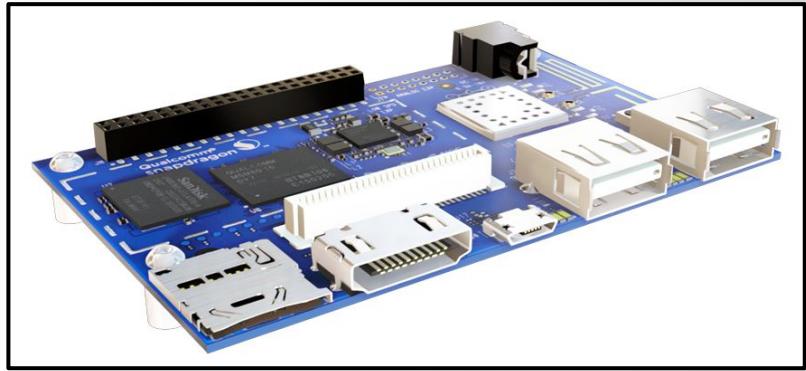
- Download win32diskimager

## 3 - Flash microSD Card with Image

- Using win32diskimager

## 4 - Install Ubuntu on DragonBoard™ 410c

- Insert microSD into Dragonboard™ 410c
- Follow on screen instructions

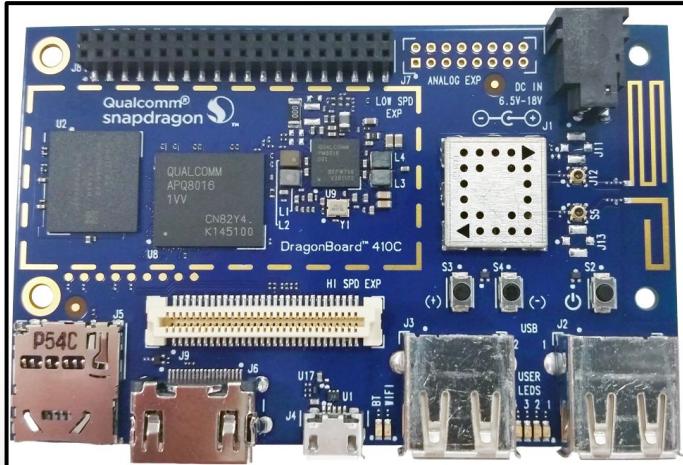
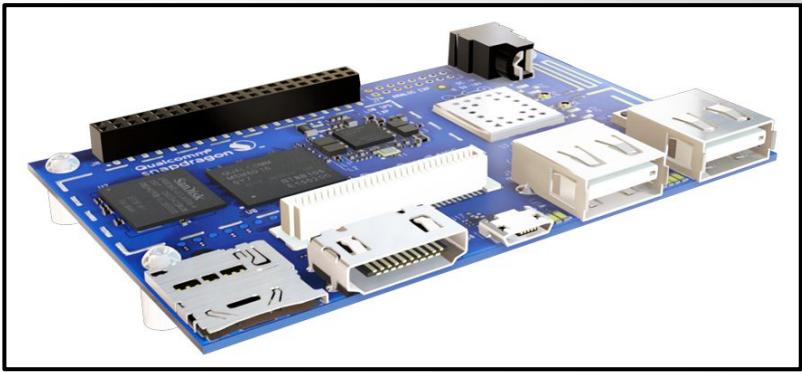


# **Lesson 3c**

Flashing Android using Fastboot (Windows)

# Lesson 3c | Flashing Android using Fastboot (Windows)

- 1 - Download Android binaries/bootloader
- 2 - Create Path Variable to binaries/bootloader
- 3 - Fastboot Flash onto eMMC



# 1 - Download Android binaries/bootloader

# 1 | Downloading Android binaries/bootloader

Screencast

## 2 - Create Path Variable to binaries/bootloader

## 2 | Create Path Variables to binaries/bootloader

Screencast

## 3 - Fastboot Flash onto eMMC

# 3 | Fastboot Flash onto eMMC

Screencast

# Lesson 3c | Summary + A Look Back

## 1 - Download Android binaries/bootloader

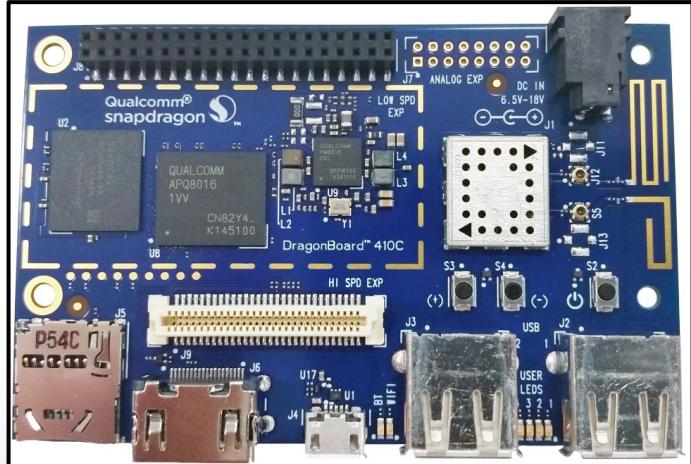
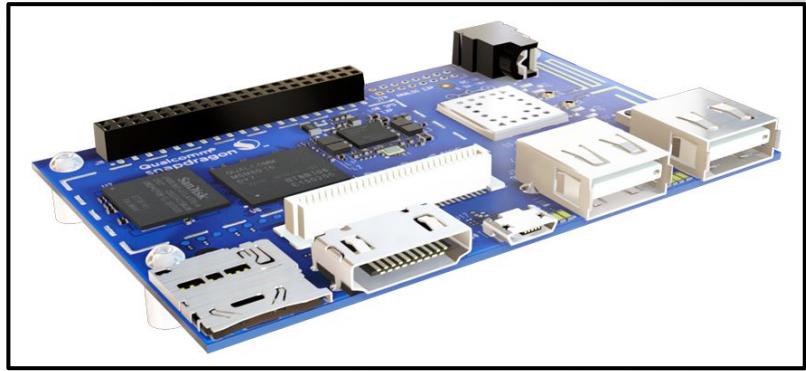
- Go to 96Boards.org
- Download Android bootloader
- Download Android binaries

## 2 - Create path variable to binaries/bootloader

- set VARIABLE=path/to/images
- Modify Flashall script

## 3 - Fastboot Flash onto eMMC

- Connect usb to Dragonboard™ 410c
- Switch boot to SD Boot
- Flash onto board with fastboot

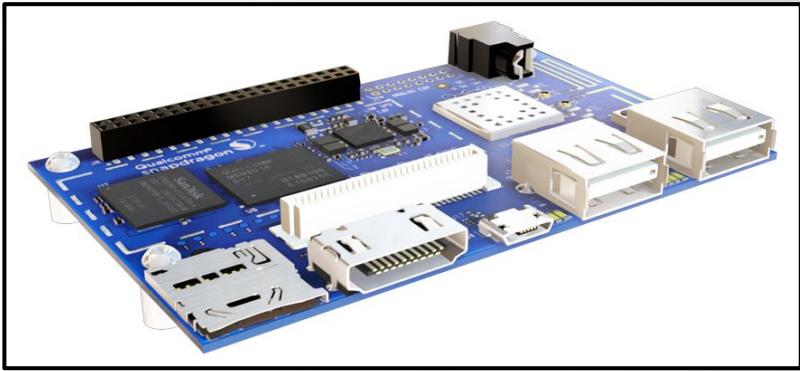


# **Lesson 3d**

Flashing Ubuntu using Fastboot (Windows)

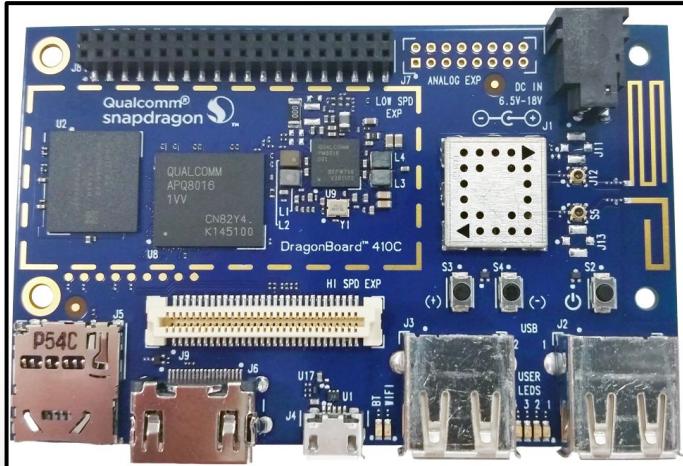
# Lesson 3d | Flashing Ubuntu using Fastboot (Windows)

1 - Download Ubuntu  
binaries/bootloader



2 - Create Path Variable to  
binaries/bootloader

3 - Fastboot Flash onto eMMC



# 1 - Download Ubuntu binaries/bootloader

# 1 | Downloading Ubuntu binaries/bootloader

Screencast

## 2 - Create Path Variable to binaries/bootloader

## 2 | Create Path Variables to binaries/bootloader

Screencast

## 3 - Fastboot Flash onto eMMC

# 3 | Fastboot Flash onto eMMC

Screencast

# Lesson 3d | Summary + A Look Back

## 1 - Download Ubuntu binaries/bootloader

- Go to 96Boards.org
- Download Ubuntu bootloader
- Download Ubuntu binaries

## 2 - Create path variable to binaries/bootloader

- set VARIABLE=path/to/images
- Modify Flashall script

## 3 - Fastboot Flash onto eMMC

- Connect usb to Dragonboard™ 410c
- Switch boot to SD Boot
- Flash onto board with fastboot

