Gateway DB410 Flashing Guide

Growhouse

Version	1.0
Status	Baseline
Date	12-March-2019

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1 INTRODUCTION

The purpose of this document is to guide how to flash the images into dragon board of GrowHouse gateway board.

2 PREREQUISITE

2.1 Hardware Prerequisite

- Below are the Hardware pre-requisite for flashing images into dragon board.
  1) Dragon board 410C board.
  2) Growhouse Mezzanine card for DB410C board.
  3) 12V DC power supply for DB410C.
  4) Standard USB Type Micro B cable.

2.2 Software Prerequisite

- Below are the Software pre-requisite for flashing images into dragon board.
  1) Linux or Windows HOST machine with USB and root access
  2) Fastboot tool for windows and linux host machine.

     - For windows

     - For Linux:
       You can install fastboot utility using below command:
       $ sudo apt-get install android-tools-fastboot

  3) Gateway board release should be downloaded from Sharepoint from below link:
     Sharepoint_Gateway_Release_V3.0

3 FLASHING DRAGONBOARD - GATEWAY BOARD

3.1 Hardware Setup

- Follow below steps to build Hardware setup for Gateway board.
  1) Connect Gateway mezzanine card on DB410C board.
     -Dragon Board 410c must be powered off.

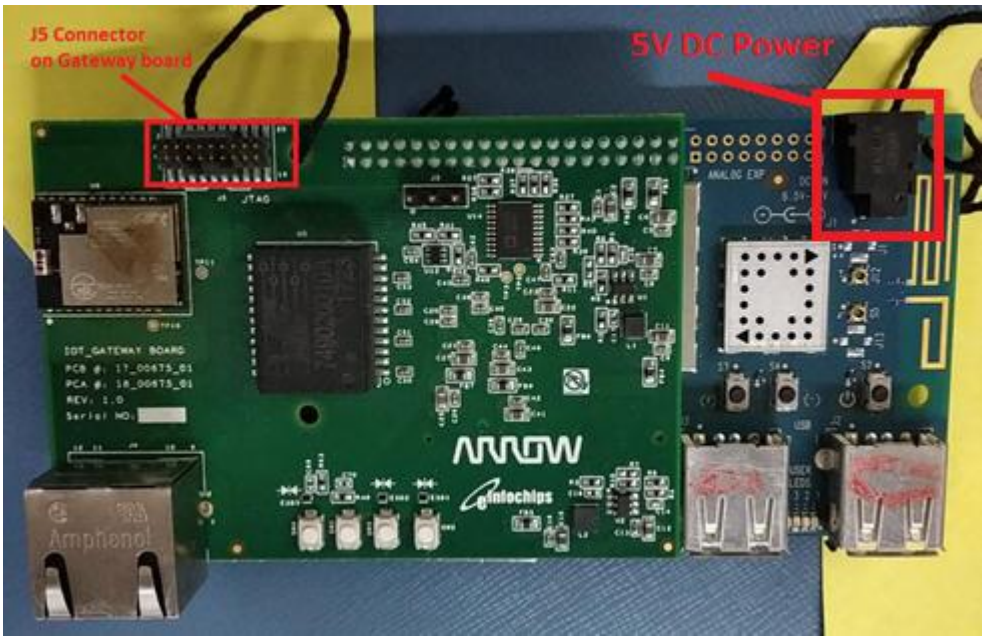

Figure 1: Gateway board with DB410 and Mezaanine Card

  2) Press and hold S4 to put dragonboard into fastboot(firmware flashing) mode and keep holding and insert DC 12V supply into DB410C board and keep holding for 3-4 seconds.

     Below figure shows switch S4 on dragon board.

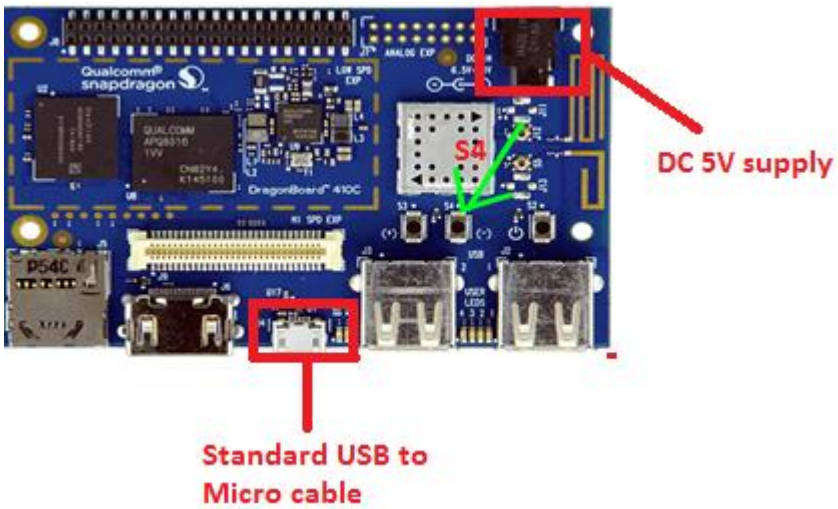

Figure 2: Dragon board Hardware connection

  3) Connect Standard USB Micro B type cable between DB410C board and HOST machine.

After this three steps your board is ready for flashing images using fastboot tool. Board should boot into fastboot mode.

3.2 Software Steps

- Follow below steps to flash the images into dragon board.
  1) Hardware should be setup as defined into Hardware setup step.
  2) Board should be booted into fastboot mode.

  - Check using below commands,

  a) For windows:

    - Download and unzip the Minimal ADB and Fastboot zip, attached in step 2.2.2.
    - Edit the System variable PATH through Edit environment variables option.

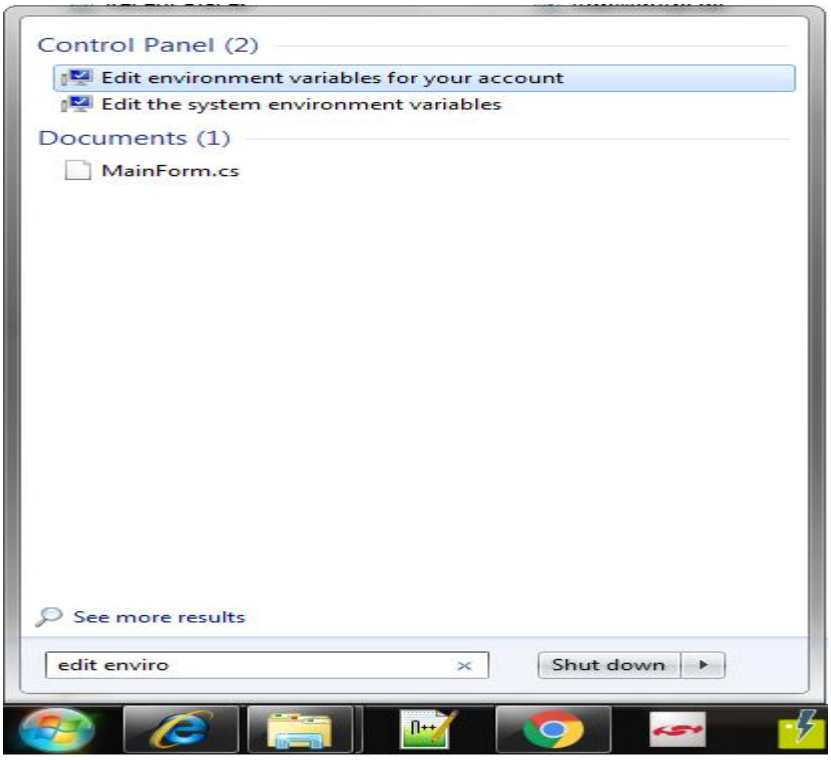

Figure 3 Edit Environment variable

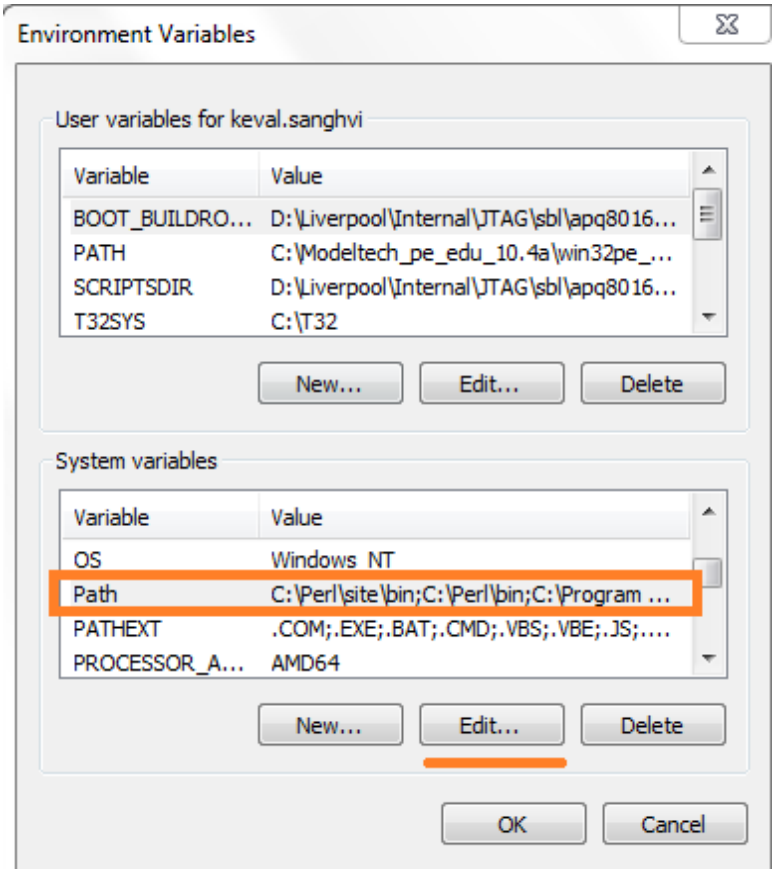

Figure 4 PATH variable

- Add path of Minimal ADB and Fastboot directory into PATH variable.

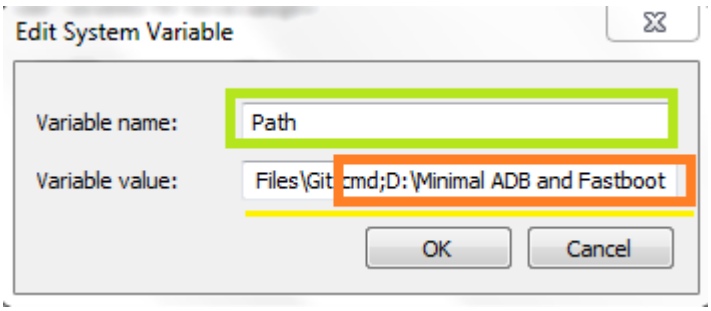

Figure 5 Add location of fastboot in PATH variable

- Open cmd utility.

  Use below command to check fastboot devices.

  C:\> *fastboot.exe devices*

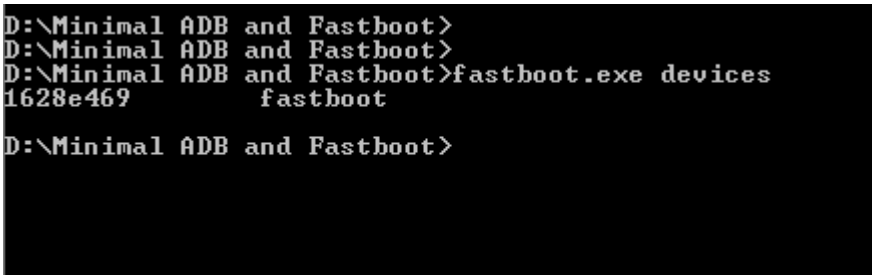

Figure 6 Windows: Fastboot device screen shot

b) For Linux:
Open terminal into linux.
Use below command to check fastboot device.

$ *sudo fastboot devices*

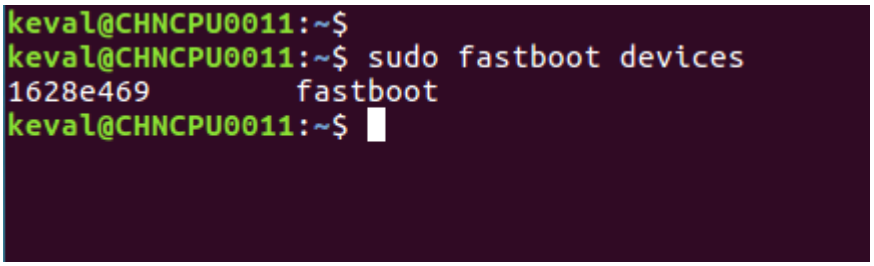

Figure 7 Linux: Fastboot Device screen shot

Note:

- If fastboot devices is not detected than remove USB cable and then remove Power supply of DB410C board and try Hardware setup steps again and then try step 2 of Software step.
- If still facing issue while booting board into fastboot mode than contact Growhouse firmware development team.

3) Extract the DB410C.zip available in ReleaseV3.0 directory.

4) For Linux host machine, follow below steps for flashing images.

- Run the flashall script to flash all the bootloader images.

  flashall script is present into compiled_bootloader directory into downloaded ReleaseV3.0 for dragonboard. Go to ReleaseV3.0/gateway_board/DB410C/compiled_bootloaders directory.

  $ cd ReleaseV3.0/gateway_board/ DB410C/compiled_bootloaders
  $ ./flashall

  Sample output of the command is as shown in below image.

```
pritesh@AHMCPU2041:/tmp/DB410C/compiled_bootloaders$ ./flashall
target reported max download size of 268435456 bytes
sending 'partition' (33 KB)...
OKAY [  0.006s]
writing 'partition'...
OKAY [  1.412s]
finished. total time: 1.418s
target reported max download size of 268435456 bytes
sending 'hyp' (60 KB)...
OKAY [  0.006s]
writing 'hyp'...
OKAY [  0.015s]
finished. total time: 0.021s
target reported max download size of 268435456 bytes
sending 'rpm' (151 KB)...
OKAY [  0.009s]
writing 'rpm'...
OKAY [  0.016s]
finished. total time: 0.025s
target reported max download size of 268435456 bytes
sending 'sbl1' (253 KB)...
OKAY [  0.012s]
writing 'sbl1'...
OKAY [  0.017s]
finished. total time: 0.029s
target reported max download size of 268435456 bytes
sending 'tz' (591 KB)...
OKAY [  0.022s]
writing 'tz'...
OKAY [  0.026s]
finished. total time: 0.048s
target reported max download size of 268435456 bytes
sending 'cdt' (0 KB)...
OKAY [  0.005s]
writing 'cdt'...
OKAY [  0.012s]
finished. total time: 0.017s
target reported max download size of 268435456 bytes
sending 'aboot' (765 KB)...
OKAY [  0.027s]
writing 'aboot'...
OKAY [  0.030s]
finished. total time: 0.057s
erasing 'boot'...
OKAY [  0.293s]
finished. total time: 0.293s
erasing 'rootfs'...
OKAY [  0.216s]
finished. total time: 0.216s
erasing 'devinfo'...
OKAY [  0.058s]
finished. total time: 0.058s
```

- Run flash_images.sh script present into ReleaseV3.0 directory.

  $ cd ReleaseV3.0/gateway_board /DB410C
  $ ./flash_images.sh

  Sample output of the command is as shown in below image.

```
pritesh@AHMCPU2041:/tmp/DB410C$ ./flash_image.sh
target reported max download size of 268435456 bytes
sending 'aboot' (765 KB)...
OKAY [  0.027s]
writing 'aboot'...
OKAY [  0.069s]
finished. total time: 0.096s
target reported max download size of 268435456 bytes
sending 'boot' (7772 KB)...
OKAY [  0.247s]
writing 'boot'...
OKAY [  0.449s]
finished. total time: 0.695s
target reported max download size of 268435456 bytes
Invalid sparse file format at header magi
sending sparse 'rootfs' (262140 KB)...
OKAY [  8.249s]
writing 'rootfs'...
OKAY [ 49.408s]
sending sparse 'rootfs' (260296 KB)...
OKAY [  8.215s]
writing 'rootfs'...
OKAY [ 20.592s]
sending sparse 'rootfs' (119072 KB)...
OKAY [  3.778s]
writing 'rootfs'...
OKAY [110.472s]
finished. total time: 200.715s
```

5) For windows host machine, follow below steps for flashing images.

- Run the *flashall* script to flash all the bootloader images.

  flashall script is present into *compiled_bootloader* directory into downloaded ReleaseV3.0 for dragonboard. Open command line at ReleaseV3.0/gateway_board/DB410C/compiled_bootloaders directory.

  D:\ReleaseV3.0\gateway_board\DB410C\compiled_bootloaders> flashall

- Run flash_images.bat script present into ReleaseV3.0 directory.

  D:\ReleaseV3.0\gateway_board\DB410C> flash_images.bat