Dell Tablet Flash notes

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Welcome to the Dell Open source guide. Here you'll find the guide that describes how to download, build and flash the appropriate kernel for Dell Venue7 3741.

Prerequisite System Setup

1) Operating Systems

   - Windows 7

   - Windows 8.1 desktop mode

2) A micro-SD card of 1GB or higher.

3) All anti-virus software should be disabled when to flash SW into device.

4) Download and install Dell driver and the flashing tool:

   - IntelAndroidDrvSetup1.7.3.exe

   - PhoneFlashTool_5.2.1.0_external_win32.zip

Note: For windows7 64bit, please follow these steps to install adb interface driver:

1) Download the FlashTool/usb_driver_r08-windows.zip file and extract it somewhere you can find it (ie: c:\ADBDrivers)
2) Make sure your tablet has USB Debugging enabled (Goto Settings ->About tablet, Press "Build number" 5 times; Goto Settings ->Developer options, Enable USB debugging.)
3) Plug USB cable into tablet and put in USB Mass Storage Mode
4) Open up Device Manager (Located in Control Panel\All Control Panel Items)
5) Under ADB interface with yellow "!", Right-click and select Update Driver Software
6) Click on Browse my computer for driver software
7) Click on Let me pick from a list of device drivers on my computer
8) Click on Show All Devices then Next. DO NOT CLICK ON ADB INTERFACE FROM THE LIST!
9) Click on Have Disk button
10) Click Browse button
11) Go to C:\ADBDrivers\usb_driver\ then select android_winusb.inf and click the Open button
12) Click OK
13) Select Android Composite ADB Interface and click the Next button
14) Click Yes on the Update Driver Warning window

* You MUST do "A. Flash A124 image to the tablet" firstly if your tablet's build number is not "LW3741A312400". (Build number is here: Settings ->About tablet ->Build number)

* WARNING: Flash A124 image will cause your data lost, please make sure you have already backup your data.

A. Flash A124 image to the tablet

1) Download the files "Unbrick/byt_t_crv2_64-blankphone.zip" and "Unbrick/byt_t_crv2_64-user-fastboot-LW3741A312400.zip".
2) Power off the tablet.
3) Press Power +(Vol+&Vol-) enter DNX mode.
4) Start Phone Flash Tool.
5) Select the "Blankphone" flash file:
    a. Go to the "Flash" tab (in the upper left).
    b. Click Browse (upper right) to find and select the appropriate "Blankphone" flash file.
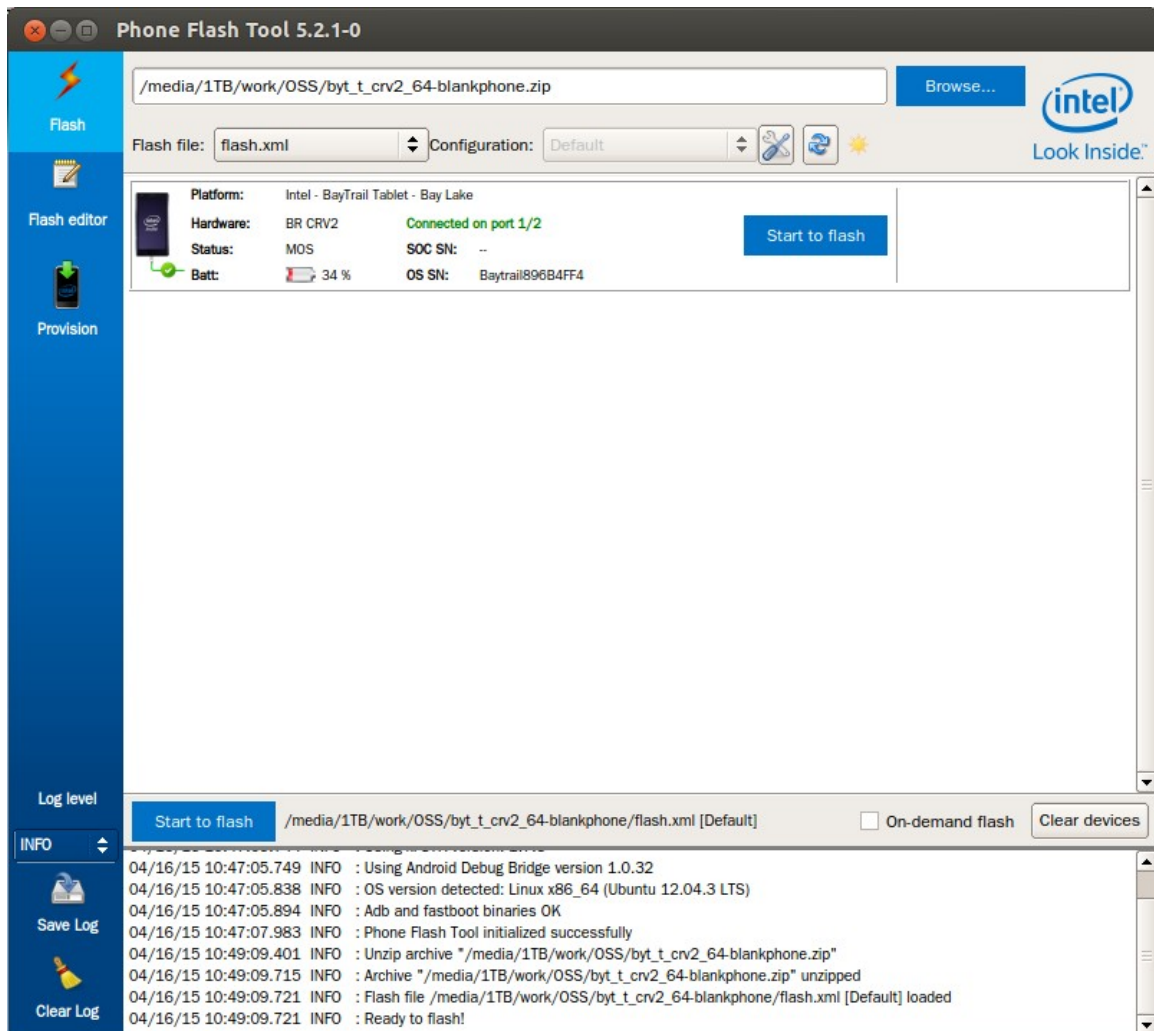
6) Ensure that the dropdown for "Flash file (*.xml)" (to the left of the Browse button) has "flash.xml" selected (and not some other .xml file).

7) Plug the USB (while the device is still powered off) (you must connect the device within a 60 seconds or flashing will "fail"). Flashing should begin. Wait for PFT to show a successful flashing of the "Blankphone"; it only takes a minute or two.

8) Ensure the device is in Fastboot mode (Droidboot). You may need to hit the power button to "wake up" the display so you can check it. It may be necessary to power cycle the device to get to the Fastboot mode. The device is now ready to be flashed with the system.

9) Select your intended "Fastboot" flash file: On the "Flash" tab with "From Local Flash File" selected: Click "Browse" to find the "Fastboot" flash file. Select the "Fastboot" flash file. (This may be the delivered file or the Fastboot file you created from your own build.)

10) Wait for the file to be unzipped and for the log at the bottom of the PFT window to say "Ready to flash!".

11) Ensure that the dropdown for "Flash file (*.xml)" (to the left of the Browse button) has "flash.xml" selected (and not some other .xml file).

12) Click the "Start to flash" button and flashing should begin (again). It takes several minutes. At the end of successful flashing, the device should finish initialization and boot up to Android OS (it may take a long time to boot Android OS after flashing).
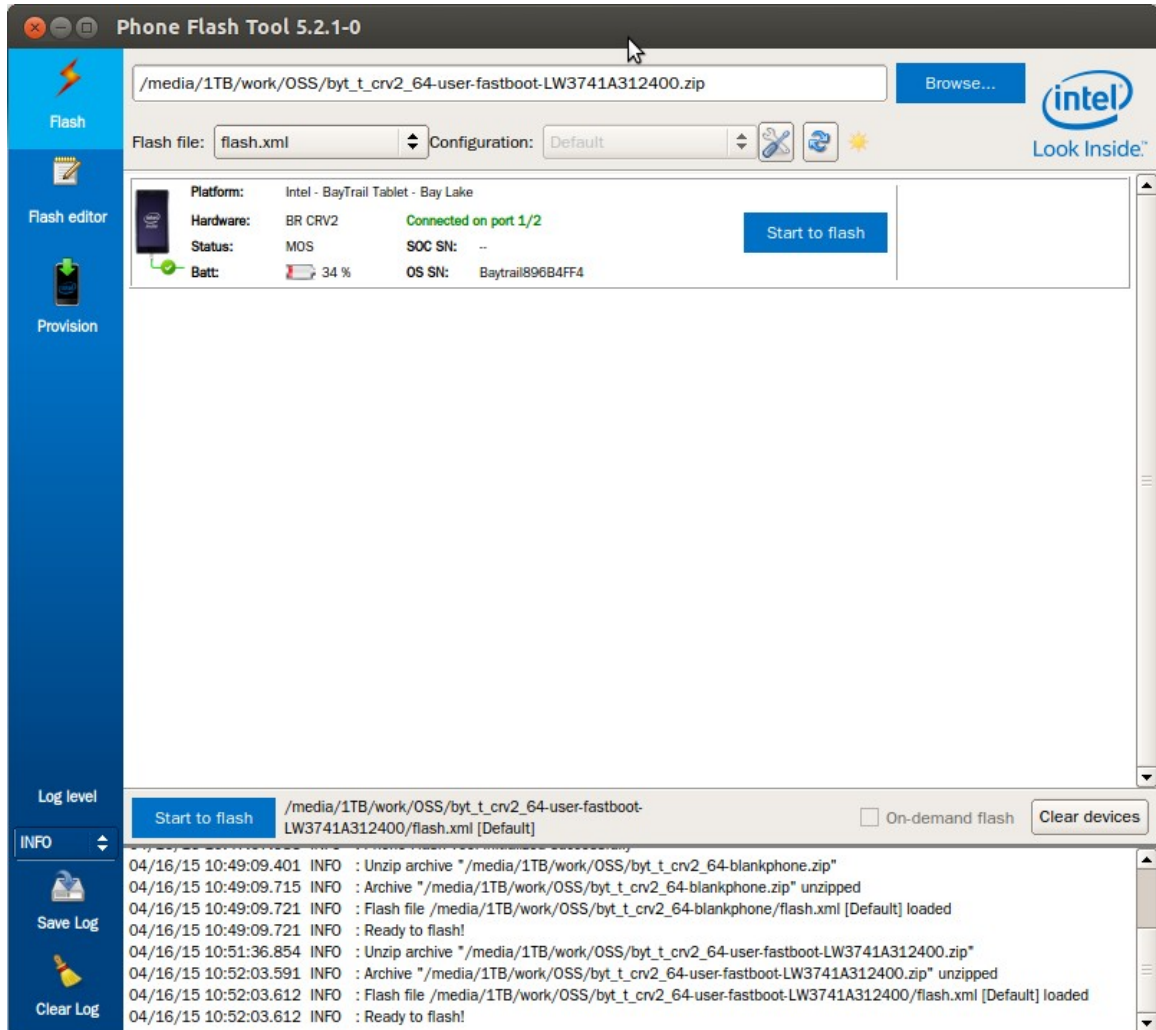

13) Unplug the USB, power off and reboot the device before performing other operations.

* You MUST do B (B. Flash special BIOS to disable sign checking) firstly, then your built boot.img can be used. Otherwise, the device cannot boot up.

B. Flash special BIOS to disable sign checking

1.   Flash boot_eng.img to enable permission for flash BIOS

1) Press power+volume down button to enter fastboot mode.
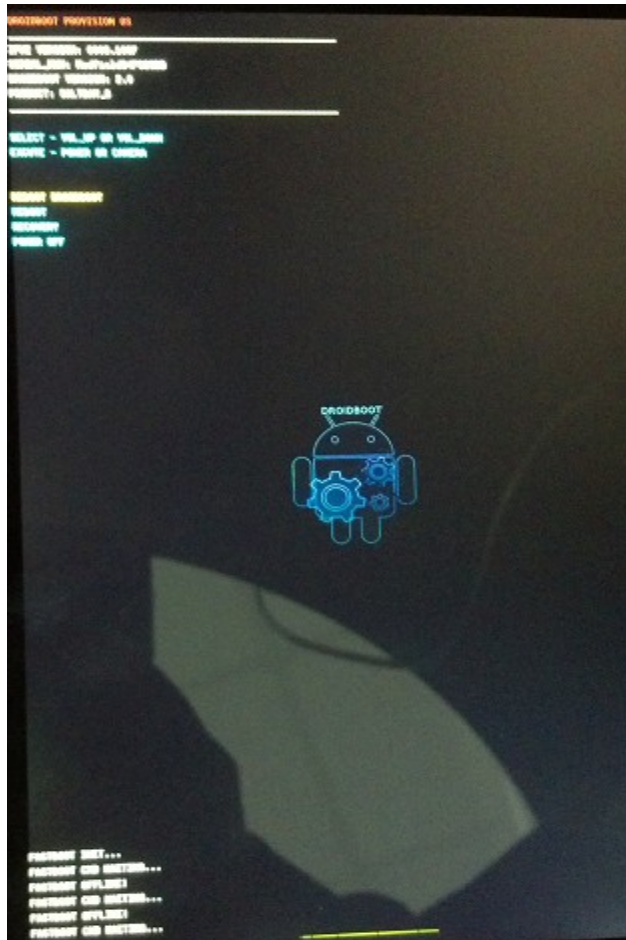
2) Run "fastboot flash boot boot_eng.img".

3) Run "fastboot reboot".

2.   Flash BIOS

1) Download and decompress flashbiosv41Root.zip.

2) Power on tablet.

3) Connect to computer and make sure the debug mode is open (Goto Settings ->About tablet, Press "Build number" 5 times; Goto Settings ->Developer options, Enable USB debugging).

4) Check the devices through command "adb devices".

5) Run "flashbios.bat" for flash BIOS.

```
wait for device...
remount succeeded
86 KB/s (8122 bytes in 0.091s)
3767 KB/s (357695 bytes in 0.092s)
4553 KB/s (2097152 bytes in 0.449s)
insmod: can't open '/lib/modules/iqvandroid.ko'

Intel (R) Flash Programming Tool. Version:  1.1.0.1090
Copyright (c) 2007 - 2013, Intel Corporation. All rights reserved.

Platform: Bay Trail
SpiLoadDevicesFile(fparts.txt)...
Found SPI device!
Reading HSFSTS register... Flash Descriptor: Valid

    --- Flash Devices Found ---
   GD25LQ16    ID:0xC86015    Size: 2048KB (16384Kb)

PDR Region does not exist.

- Reading Flash [0x200000] 2048KB of 2048KB - 100% complete.
- Erasing Flash Block [0x007000] - 100% complete.
- Programming Flash [0x007000]   12KB of   12KB - 100% complete.
- Erasing Flash Block [0x02A000] - 100% complete.
- Programming Flash [0x02A000]  136KB of  136KB - 100% complete.
- Erasing Flash Block [0x176000] - 100% complete.
- Programming Flash [0x176000]   24KB of   24KB - 100% complete.
- Erasing Flash Block [0x1A0000] - 100% complete.
- Programming Flash [0x1A0000]  100KB of  100KB - 100% complete.
- Erasing Flash Block [0x1CA000] - 100% complete.
- Programming Flash [0x1CA000]    4KB of    4KB - 100% complete.
- Erasing Flash Block [0x200000] - 100% complete.
- Programming Flash [0x200000]  128KB of  128KB - 100% complete.
- Verifying Flash [0x200000] 2048KB of 2048KB - 100% complete.
RESULT: The data is identical.

FPT Operation Passed
< waiting for device >
sending 'fw_stage2' (2048 KB)...
OKAY [  0.218s]
writing 'fw_stage2'...
OKAY [  0.711s]
finished. total time: 0.928s
```

Note: If always show < waiting for device > and device already boot up to android, please check "Settings->About tablet->Bios version", if it is "LW_T7GD2_0.41", it means BIOS already flashed, then stop the command execute and power off the tablet.

* You can either do C (C. Rooting and bootloader unlocking process using OTA package) or do D (D. Build the kernel image from the kernel sources and flash kernel image) to root your tablet.

C. Rooting and bootloader unlocking process using OTA package

1) Download the file "byt_t_crv2_64-ota-LW3741A312400.zip".

2) Copy "byt_t_crv2_64-ota-LW3741A312400.zip" to a micro-sd card and insert that card into the micro-sd card slot of dell venue tablet.

3) Power down the tablet.

4) Get to bootloader on the tablet (power+vol down button).

5) Select recovery (3 item from list). Use vol down to navigate to it and select it by pressing power button.

6) You will see android lying down with an ! Sign.

7) Select "apply update from SD card" (use vol down to navigate to it) and then press power button to select it.

8) Then select the file you stored on the SD card (use vol down button to navigate to it) and press power button.

9) You will see a few messages on the screen (like cannot load volume /misc and then some update messages).

10) After a few minutes system will finish OTA and reboot, now you are done and the boot loader is unlocked and you have root access.

D. Build the kernel image from the kernel sources and flash kernel image

1.   Build the kernel image from the kernel sources

1) Download kernel source package "dell_venue7_3741_linux.tar.gz".

2) Download Android AOSP 4.4 source codes from android.com. The detailed download instruction is available at https://source.android.com/source/downloading.html.

\> pwd

/localdisk3/dell_venue

\> mkdir aosp

\> cd aosp

\> repo init -u https://android.googlesource.com/platform/manifest -b android-4.4_r1.2

\> repo sync .

3) Download gcc for linux-x86.

\> git clone https://android.googlesource.com/platform/prebuilts/gcc/linux-x86/x86/x86_64-linux-android-4.7

4) Copy "x86_64-linux-android-4.7/*" directory to "prebuilts/gcc/linux-x86/x86/x86_64-linux-android-4.7/".

5) Extract the kernel source package "dell_venue_kernel.tgz" to the Android source root directory, i.e. aosp directory in this example.

\> pwd

/localdisk3/dell_venue/aosp

\> tar –zxvf dell_venue7_3741_linux.tar.gz

6) Once done, you should be able to see the "linux" directory inside aosp directory.

7) Copy "prebuilts" directory into "linux" directory. Run the kernel build script.

\> cd linux

\> ./build_kernel.sh

8) Check out if the kernel image "boot.img" was created.

\> cd out/target/product/

\> pwd

/localdisk3/dell_venue/aosp/linux/out/target/product
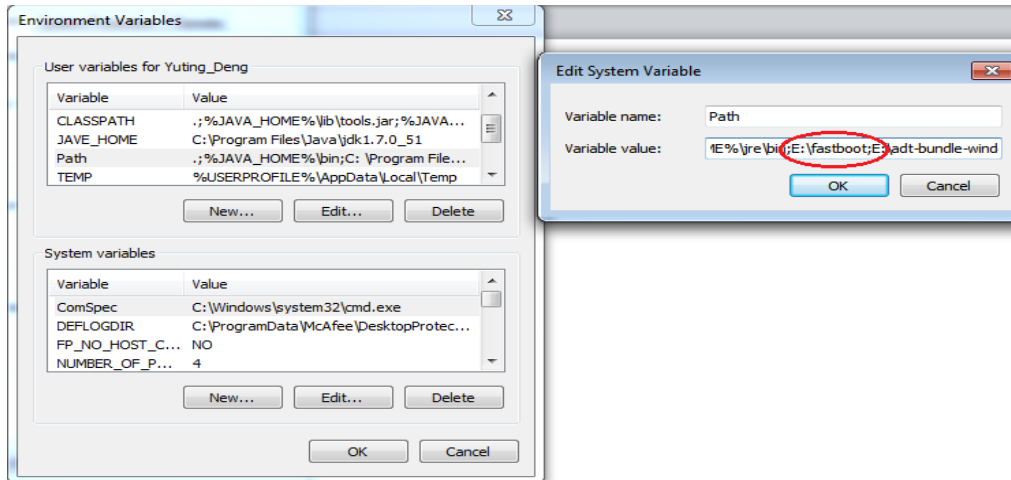
\> ls -al boot.img

-rw-r----- 1 xxx yyy 8540672 Mar 19 14:56 boot.img.

2.   Flash boot.img

1) make the device enable fastboot mode.

2) Download adb.exe, fastboot.exe, AdbWinApi.dll, AdbWinUsbApi.dll from "FlashTool/fastboot".

3) Configure environment variable as the following. If this variable has been set before, please add this new environment path before old path.

4) In a cmd window, type "fastboot devices" and you should see the screen.
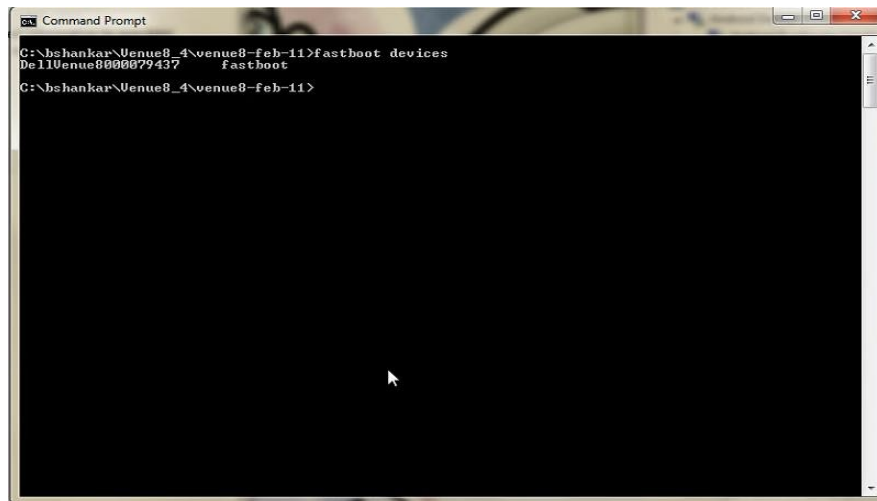
5) Go to the directory contains "boot.img" (linux/out/target/product/) and run these commands.

   \> fastboot flash boot boot.img

   \> fastboot reboot

6) After the device is rebooted, confirm if the image is properly flashed. Go to Settings->About tablet and make sure if the information in Kernel version is right.

E. Unbricking Process

If you encounter some issues when doing the OTA or flash new firmware and boot image, please reference section "**Flash A124 image to the tablet**" to unbrick the tablet.