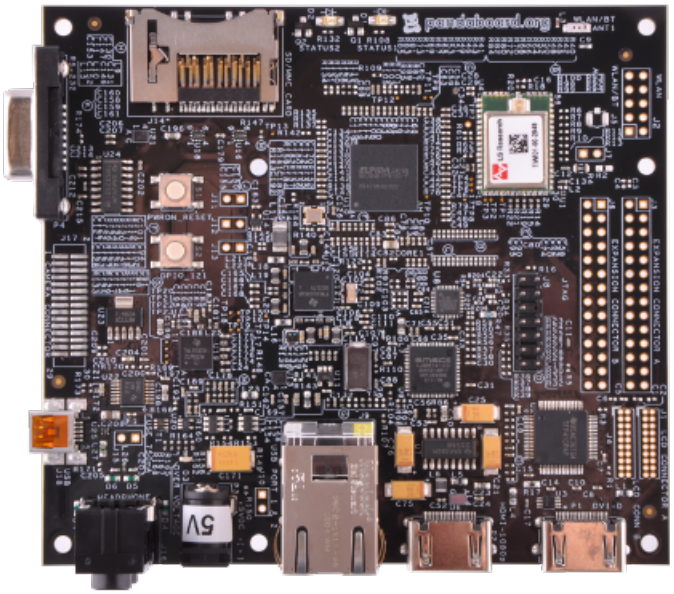
pandaboard.org



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Pandaboard Guide: Running Android ICS

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October 25, 2012

Abstract

In this guide, I will describe how to run Android ICS(4.0.4) step by step. This guide uses ready made binaries hosted on the Texas Instruments Gforge website. This guide targets beginners who are just getting started on the Pandaboard and want to play around with Android. These instructions will work for Pandaboard as well as Pandaboard ES. These binaries are the only one that support all most all the functionalities out of the box on Pandaboard.

Setup

- I used an Ubuntu 12.04 64 bit machine.
- I used Pandaboard ES for this guide.
- Throughout the entire procedure, you will need to have an active INTERNET connection.

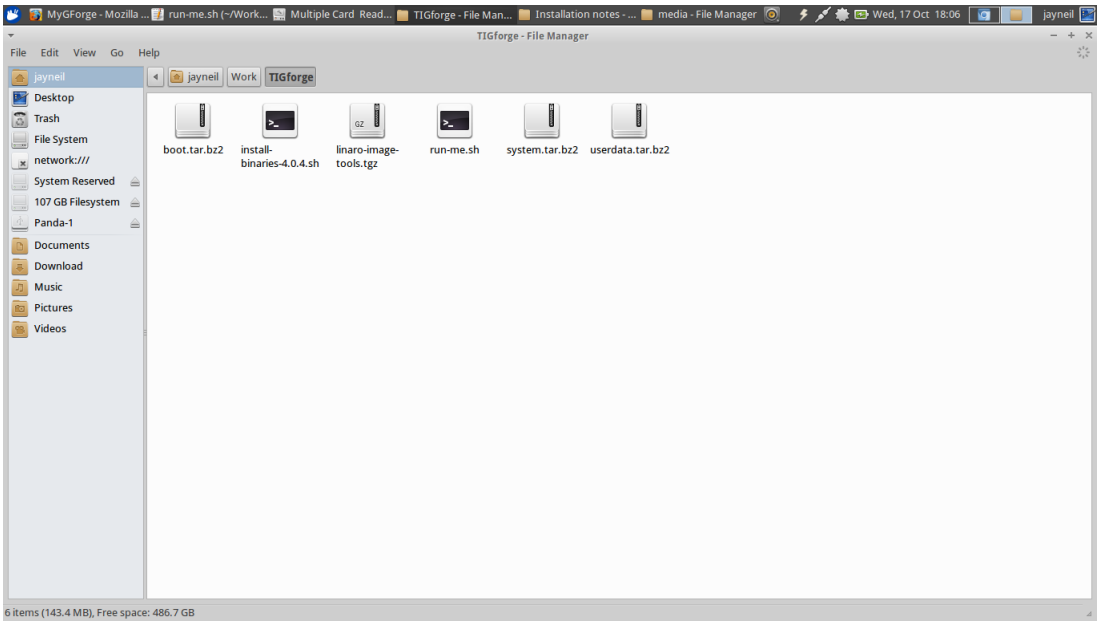
Steps

- Download all the six files hosted on the TI Gforge site below:

  https://gforge.ti.com/gf/project/panda_binaries/frs/?action=FrsReleaseBrowse&frs_package_id=293

  The files are namely:install-binaries-4.0.4.sh, run-me.sh, userdata.tar.bz2, boot.tar.bz2, system.tar.bz2, linaro-image-tools.tgz.

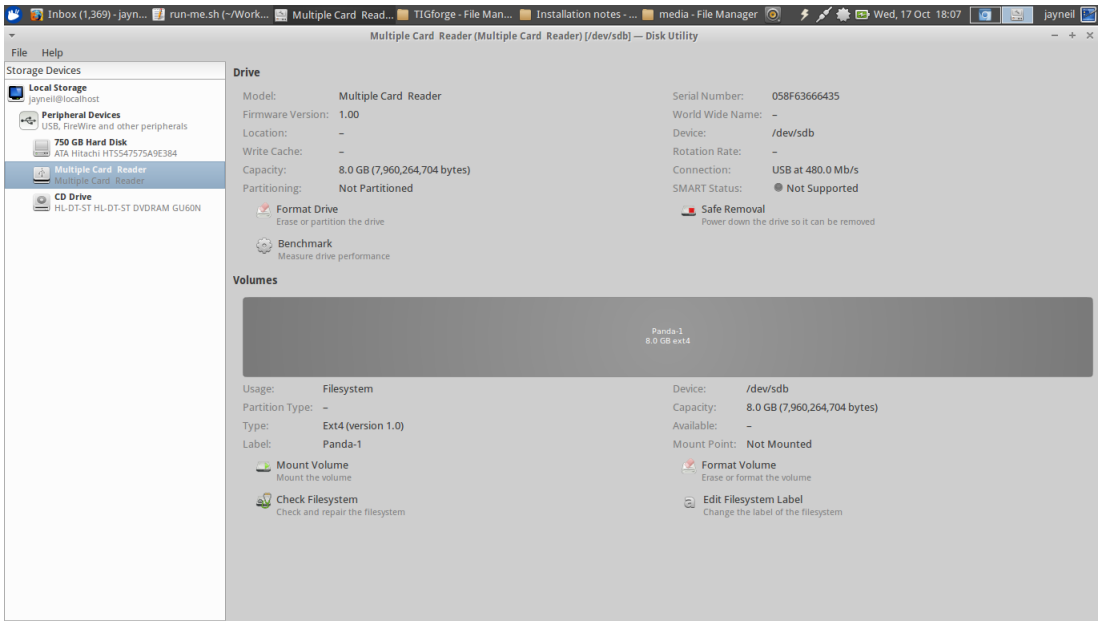
  See the figure below for more details.



- Install the disk utlity software from the Ubuntu Software Center.

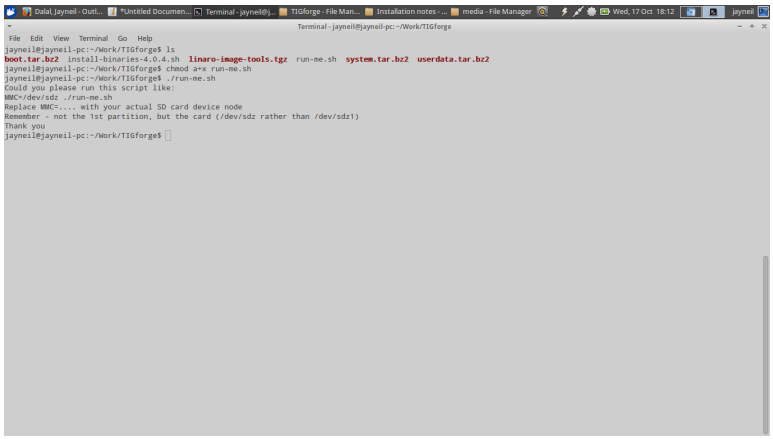
- Now, insert your SD card in the card slot on your computer/laptop.

- Make sure that the SD card is not mounted. If it is mounted, then unmount it using disk utlility as shown in the figure below:



- Now, identify the correct raw device name (like /dev/sde - not /dev/sde1). You can do this by opening disk utility in Ubuntu and clicking on the sd card. You can erase your hard drive with the wrong parameter.
- Now lets make 'run-me.sh' script executable and run it by typing the following in the terminal. The output will give you an idea on how to use the script as shown in the figure below.

```
$ chmod a+x rum-me.sh
$ ./run-me.sh
```

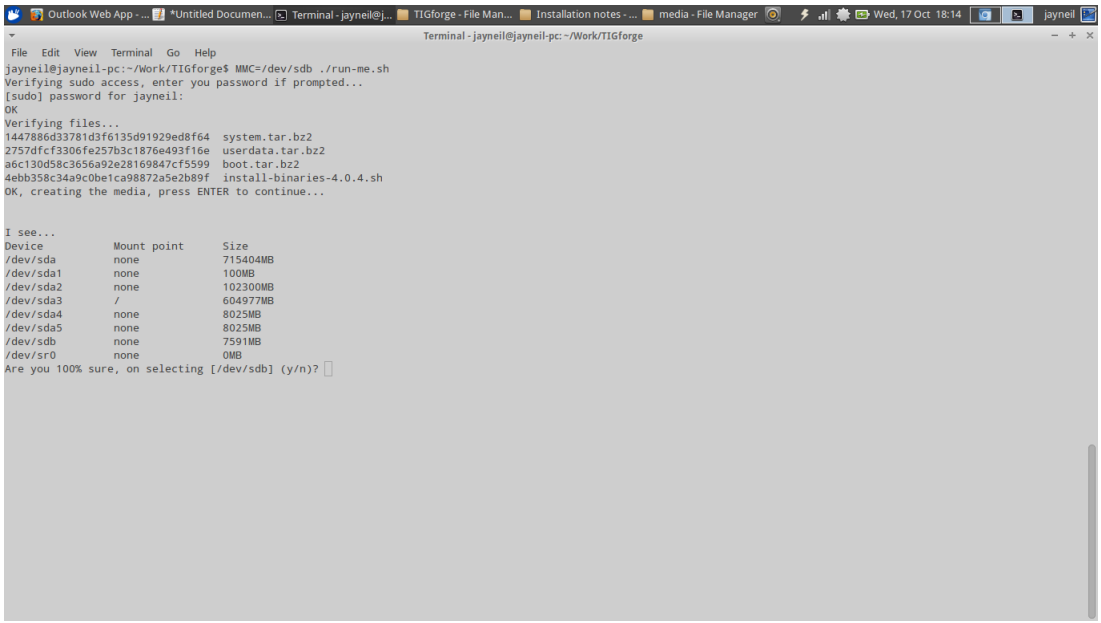


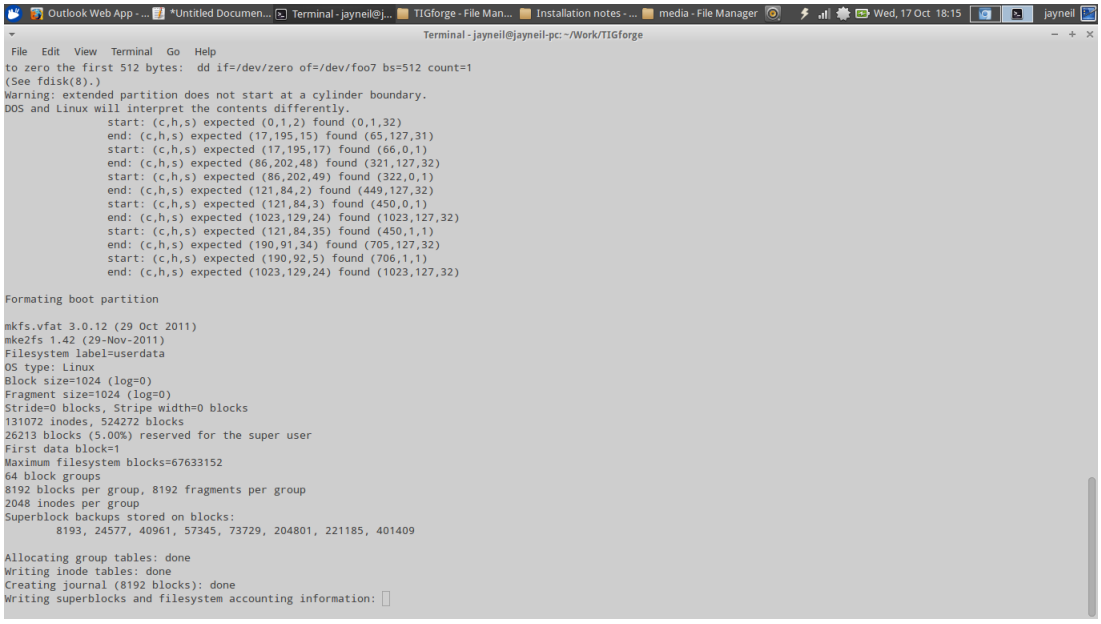
- Now that we know how to use the script, lets execute it to prepare the sd card by typing the following command in the terminal:

```
$ MMC=/dev/sdb ./run-me.sh
```

'sdb' is the raw device which we found earlier .

During the process, you will also be asked to accept the license for graphic binaries. So, please do accept it. The output should be similar to the one shown in the figures below:


Outlook Web App - ...
*Untitled Documen...
Terminal - jayneil@j...
TIGforge - File Man...
Installation notes - ...
media - File Manager
Wed, 17 Oct 18:14
jayneil
Terminal - jayneil@jayneil-pc: ~/Work/TIGforge
File Edit View Terminal Go Help
jayneil@jayneil-pc:~/Work/TIGforge$ MMC=/dev/sdb ./run-me.sh
Verifying sudo access, enter you password if prompted...
[sudo] password for jayneil:
OK
Verifying files...
1447886d33781d3f6135d91929ed8f64 system.tar.bz2
2757dfcf3306fe257b3c1876e493f16e userdata.tar.bz2
a6c130d58c3656a92e28169847cf5599 boot.tar.bz2
4ebb358c34a9c0be1ca98872a5e2b89f install-binaries-4.0.4.sh
OK, creating the media, press ENTER to continue...
I see...
Device Mount point Size
/dev/sda none 715404MB
/dev/sda1 none 100MB
/dev/sda2 none 102300MB
/dev/sda3 / 604977MB
/dev/sda4 none 8025MB
/dev/sda5 none 8025MB
/dev/sdb none 7591MB
/dev/sr0 none 0MB
Are you 100% sure, on selecting [/dev/sdb] (y/n)?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jayneil
Terminal - jayneil@jayneil-pc: ~/Work/TIGforge
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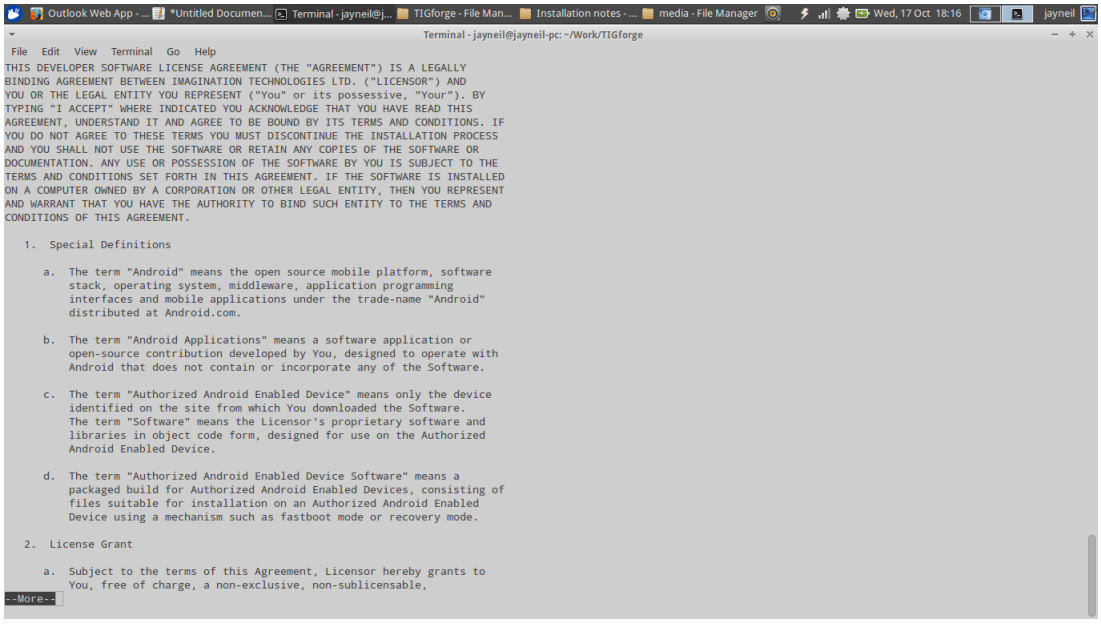
to zero the first 512 bytes: dd if=/dev/zero of=/dev/foo7 bs=512 count=1
(See fdisk(8).)
Warning: extended partition does not start at a cylinder boundary.
DOS and Linux will interpret the contents differently.
start: (c,h,s) expected (0,1,2) found (0,1,32)
end: (c,h,s) expected (17,195,15) found (65,127,31)
start: (c,h,s) expected (17,195,17) found (66,0,1)
end: (c,h,s) expected (86,202,48) found (321,127,32)
start: (c,h,s) expected (86,202,49) found (322,0,1)
end: (c,h,s) expected (121,84,2) found (449,127,32)
start: (c,h,s) expected (121,84,3) found (450,0,1)
end: (c,h,s) expected (1023,129,24) found (1023,127,32)
start: (c,h,s) expected (121,84,35) found (450,1,1)
end: (c,h,s) expected (190,91,34) found (705,127,32)
start: (c,h,s) expected (190,92,5) found (706,1,1)
end: (c,h,s) expected (1023,129,24) found (1023,127,32)
Formating boot partition
mkfs.vfat 3.0.12 (29 Oct 2011)
mke2fs 1.42 (29-Nov-2011)
Filesystem label=userdata
OS type: Linux
Block size=1024 (log=0)
Fragment size=1024 (log=0)
Stride=0 blocks, Stripe width=0 blocks
131072 inodes, 524272 blocks
26213 blocks (5.00%) reserved for the super user
First data block=1
Maximum filesystem blocks=67633152
64 block groups
8192 blocks per group, 8192 fragments per group
2048 inodes per group
Superblock backups stored on blocks:
8193, 24577, 40961, 57345, 73729, 204801, 221185, 401409
Allocating group tables: done
Writing inode tables: done
Creating journal (8192 blocks): done
Writing superblocks and filesystem accounting information: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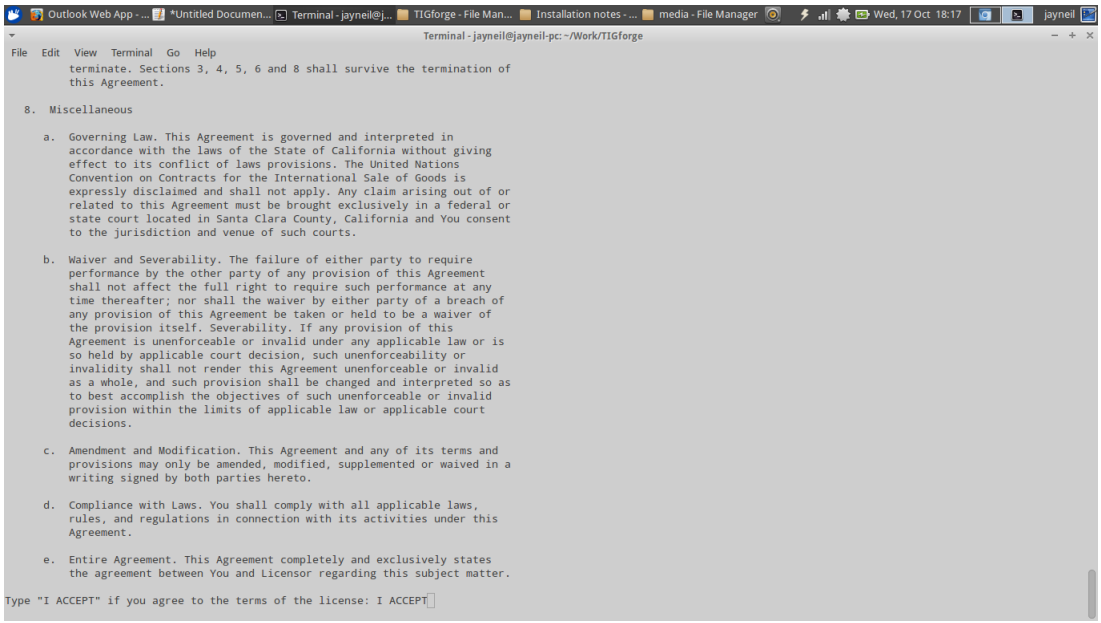
1. Special Definitions
a. The term "Android" means the open source mobile platform, software
stack, operating system, middleware, application programming
interfaces and mobile applications under the trade-name "Android"
distributed at Android.com.
b. The term "Android Applications" means a software application or
open-source contribution developed by You, designed to operate with
Android that does not contain or incorporate any of the Software.
c. The term "Authorized Android Enabled Device" means only the device
identified on the site from which You downloaded the Software.
The term "Software" means the Licensor's proprietary software and
libraries in object code form, designed for use on the Authorized
Android Enabled Device.
d. The term "Authorized Android Enabled Device Software" means a
packaged build for Authorized Android Enabled Devices, consisting of
files suitable for installation on an Authorized Android Enabled
Device using a mechanism such as fastboot mode or recovery mode.
2. License Grant
a. Subject to the terms of this Agreement, Licensor hereby grants to
You, free of charge, a non-exclusive, non-sublicensable,
--More--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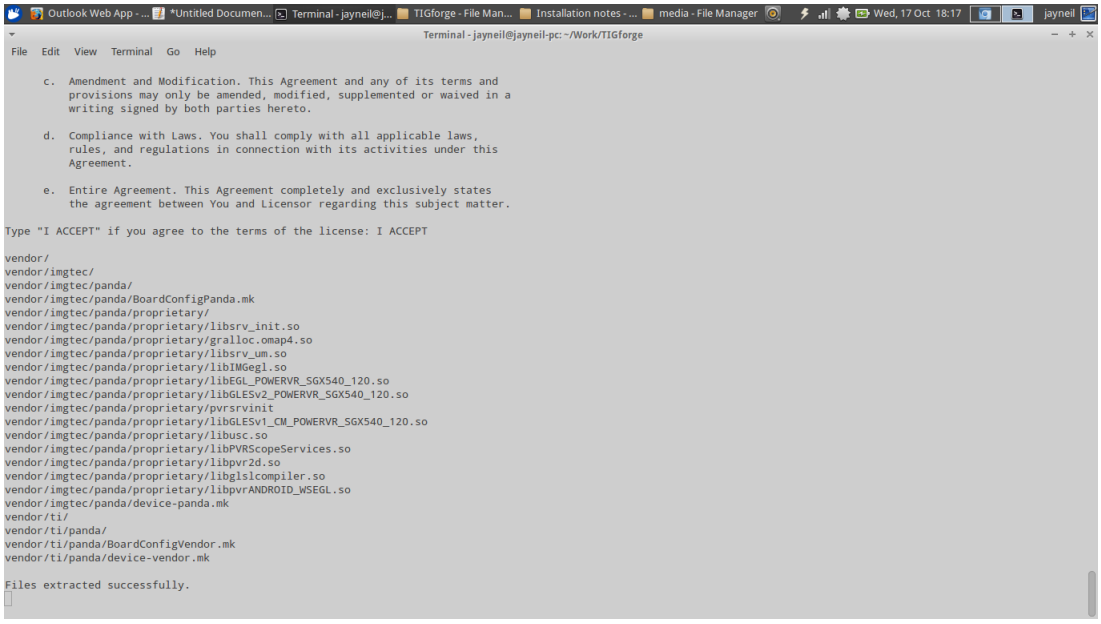
terminate. Sections 3, 4, 5, 6 and 8 shall survive the termination of this Agreement.
8. Miscellaneous
a. Governing Law. This Agreement is governed and interpreted in accordance with the laws of the State of California without giving effect to its conflict of laws provisions. The United Nations Convention on Contracts for the International Sale of Goods is expressly disclaimed and shall not apply. Any claim arising out of or related to this Agreement must be brought exclusively in a federal or state court located in Santa Clara County, California and You consent to the jurisdiction and venue of such courts.
b. Waiver and Severability. The failure of either party to require performance by the other party of any provision of this Agreement shall not affect the full right to require such performance at any time thereafter; nor shall the waiver by either party of a breach of any provision of this Agreement be taken or held to be a waiver of the provision itself. Severability. If any provision of this Agreement is unenforceable or invalid under any applicable law or is so held by applicable court decision, such unenforceability or invalidity shall not render this Agreement unenforceable or invalid as a whole, and such provision shall be changed and interpreted so as to best accomplish the objectives of such unenforceable or invalid provision within the limits of applicable law or applicable court decisions.
c. Amendment and Modification. This Agreement and any of its terms and provisions may only be amended, modified, supplemented or waived in a writing signed by both parties hereto.
d. Compliance with Laws. You shall comply with all applicable laws, rules, and regulations in connection with its activities under this Agreement.
e. Entire Agreement. This Agreement completely and exclusively states the agreement between You and Licensor regarding this subject matter.
Type "I ACCEPT" if you agree to the terms of the license: I ACCEPT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c. Amendment and Modification. This Agreement and any of its terms and provisions may only be amended, modified, supplemented or waived in a writing signed by both parties hereto.
d. Compliance with Laws. You shall comply with all applicable laws, rules, and regulations in connection with its activities under this Agreement.
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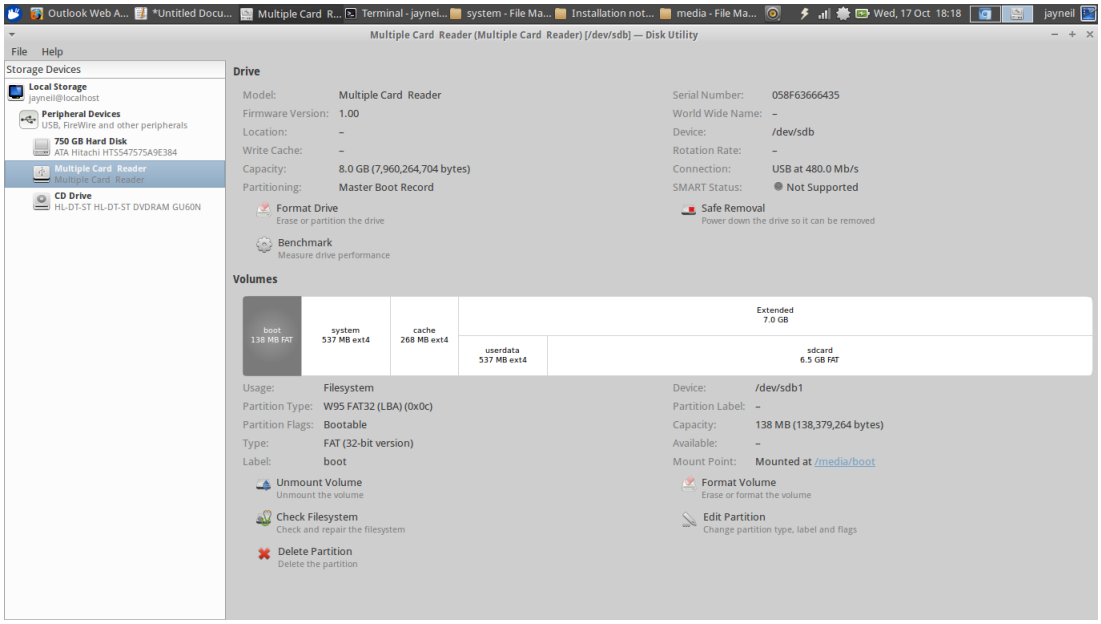
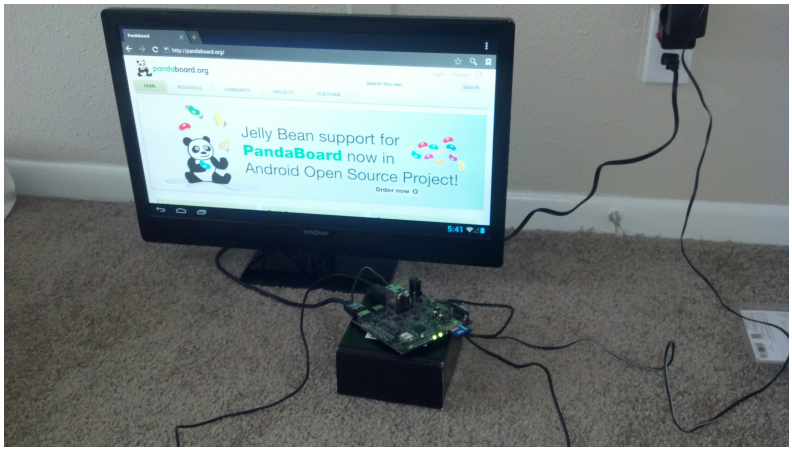
Type "I ACCEPT" if you agree to the terms of the license: I ACCEPT
vendor/
vendor/imgtec/
vendor/imgtec/panda/
vendor/imgtec/panda/BoardConfigPanda.mk
vendor/imgtec/panda/proprietary/
vendor/imgtec/panda/proprietary/libsrv_init.so
vendor/imgtec/panda/proprietary/gralloc.omap4.so
vendor/imgtec/panda/proprietary/libsrv_um.so
vendor/imgtec/panda/proprietary/libIMGegl.so
vendor/imgtec/panda/proprietary/libEGL_POWERVR_SGX540_120.so
vendor/imgtec/panda/proprietary/libGLESv2_POWERVR_SGX540_120.so
vendor/imgtec/panda/proprietary/pvrsrvinit
vendor/imgtec/panda/proprietary/libGLESv1_CM_POWERVR_SGX540_120.so
vendor/imgtec/panda/proprietary/libusc.so
vendor/imgtec/panda/proprietary/libPVRScopeServices.so
vendor/imgtec/panda/proprietary/libpvr2d.so
vendor/imgtec/panda/proprietary/libglslcompiler.so
vendor/imgtec/panda/proprietary/libpvrANDROID_WSEGL.so
vendor/imgtec/panda/device-panda.mk
vendor/ti/
vendor/ti/panda/
vendor/ti/panda/BoardConfigVendor.mk
vendor/ti/panda/device-vendor.mk
Files extracted successfully.

- Mount the SD card back using disk utility. There should be a lot of partitions created on it as shown below:



- Remove the SD card from the device writer and plug it into the board. If all went well, you should see Android booting up on the pandaboard as shown below: