



Sensor Validation Setup - Android

Rev. A1

30 July 2014

Sensor Validation Setup

For Intersil Corporation, USA

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Revision History:

Date	Rev No.	Description	By
30-July-2014	A1	Sensor validation setup for android	VVDN

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1 Introduction

This document describes the process of setting up an Android Build Server (would be setup at Intersil, Milpitas premises) in order to generate binaries to be flashed to SD card used to boot Pandaboard reference board. The binaries generated after integration of android sensor driver would then be used to validate the sensor features.

This document is made for the reference of

- Product managers at VVDN / Intersil and Quality Assurance Department to understand the sensor validation setup
- Engineering Team at VVDN / Intersil for recreating the sensor validation setup using this guide

1.1 Reference documents

S. No.	Description	Revision	Date
1	ISL29177_AndroidDriver_IntegrationGuide_A1.pdf	A1	30 Jul 2014

2 Software setup

2.1 Build environment

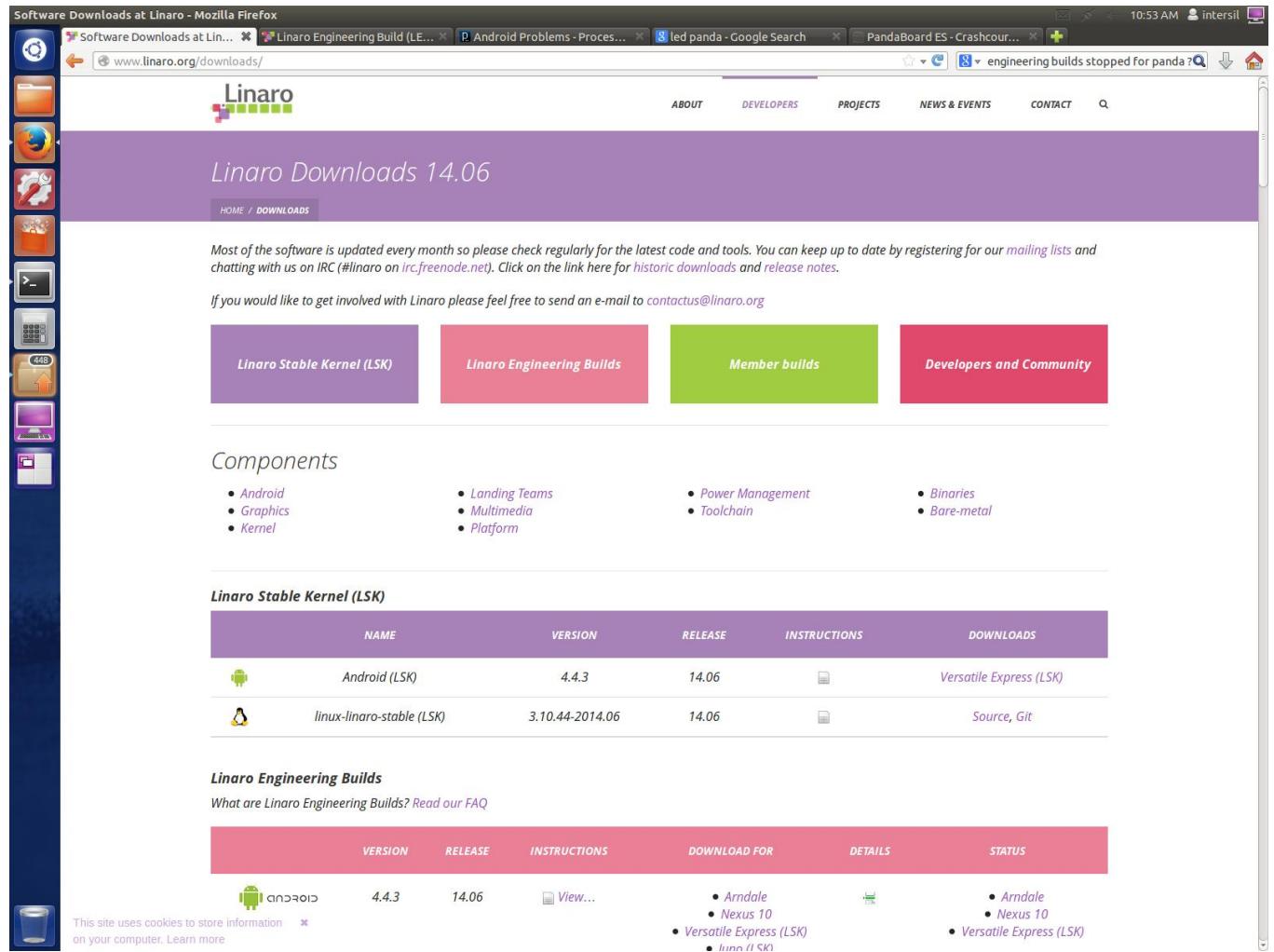
Operating System	Ubuntu 13.10 64-bit Linux Kernel 3.2.0-54-generic
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IMPORTANT NOTE: Initially the build operating system that already existed in Android build server at Intersil , Milpitas has Ubuntu 13.10 64-bit. As it is not an LTS version any future support may not be available for this operating system. Once the support period for 13.10 is over we may need to migrate to Ubuntu 12.04 (upto 2017) or 14.04 (upto 2019) versions of Ubuntu.

2.2 Downloading android source

STEP1 : Go to the url <http://www.linaro.org/downloads> from any browser. You should see a webpage as shown below.

Figure : Linaro download page



Linaro Downloads 14.06

Most of the software is updated every month so please check regularly for the latest code and tools. You can keep up to date by registering for our [mailing lists](#) and chatting with us on IRC (#linaro on irc.freenode.net). Click on the link here for [historic downloads and release notes](#).

If you would like to get involved with Linaro please feel free to send an e-mail to contactus@linaro.org

Linaro Stable Kernel (LSK)	Linaro Engineering Builds	Member builds	Developers and Community
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Components

- [Android](#)
- [Graphics](#)
- [Kernel](#)
- [Landing Teams](#)
- [Multimedia](#)
- [Platform](#)
- [Power Management](#)
- [Toolchain](#)
- [Binaries](#)
- [Bare-metal](#)

Linaro Stable Kernel (LSK)

NAME	VERSION	RELEASE	INSTRUCTIONS	DOWNLOADS
Android (LSK)	4.4.3	14.06	View...	Versatile Express (LSK)
linux-linaro-stable (LSK)	3.10.44-2014.06	14.06	View...	Source, Git

Linaro Engineering Builds

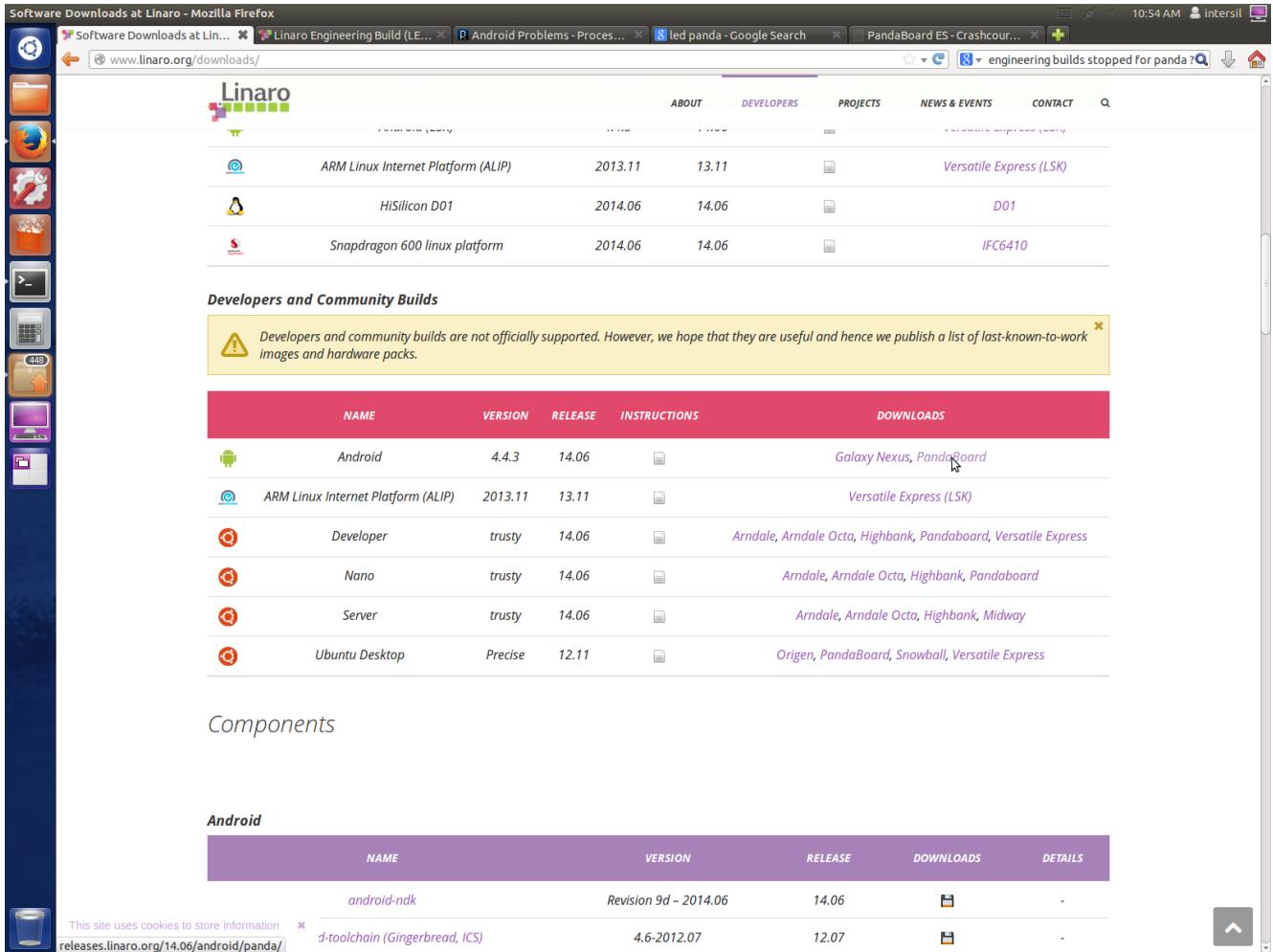
What are Linaro Engineering Builds? [Read our FAQ](#)

VERSION	RELEASE	INSTRUCTIONS	DOWNLOAD FOR	DETAILS	STATUS
4.4.3	14.06	View...	View...	<ul style="list-style-type: none"> • Arndale • Nexus 10 • Versatile Express (LSK) • Linux I/O SKI 	<ul style="list-style-type: none"> • Arndale • Nexus 10 • Versatile Express (LSK) • Linux I/O SKI

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STEP 2: Scroll down the webpage to the “**Developer and Community Builds**” section and click on the link for Pandaboard as shown in below image. It would navigate to the webpage containing information about recent android source code released for Pandaboard by Linaro.

Figure : Linaro download page - Section for Pandaboard



The screenshot shows a Mozilla Firefox browser window with several tabs open. The main content area displays the Linaro Software Downloads page. In the center, there is a section titled "Developers and Community Builds" with a warning message: "Developers and community builds are not officially supported. However, we hope that they are useful and hence we publish a list of last-known-to-work images and hardware packs." Below this, a table lists various developer builds:

NAME	VERSION	RELEASE	INSTRUCTIONS	DOWNLOADS
Android	4.4.3	14.06	[link]	Galaxy Nexus, PandaBoard
ARM Linux Internet Platform (ALIP)	2013.11	13.11	[link]	Versatile Express (LSK)
Developer	trusty	14.06	[link]	Arndale, Arndale Octa, Highbank, Pandaboard, Versatile Express
Nano	trusty	14.06	[link]	Arndale, Arndale Octa, Highbank, Pandaboard
Server	trusty	14.06	[link]	Arndale, Arndale Octa, Highbank, Midway
Ubuntu Desktop	Precise	12.11	[link]	Origen, PandaBoard, Snowball, Versatile Express

At the bottom left, a cookie consent banner from "releases.linaro.org/14.06/android/panda/" is visible.

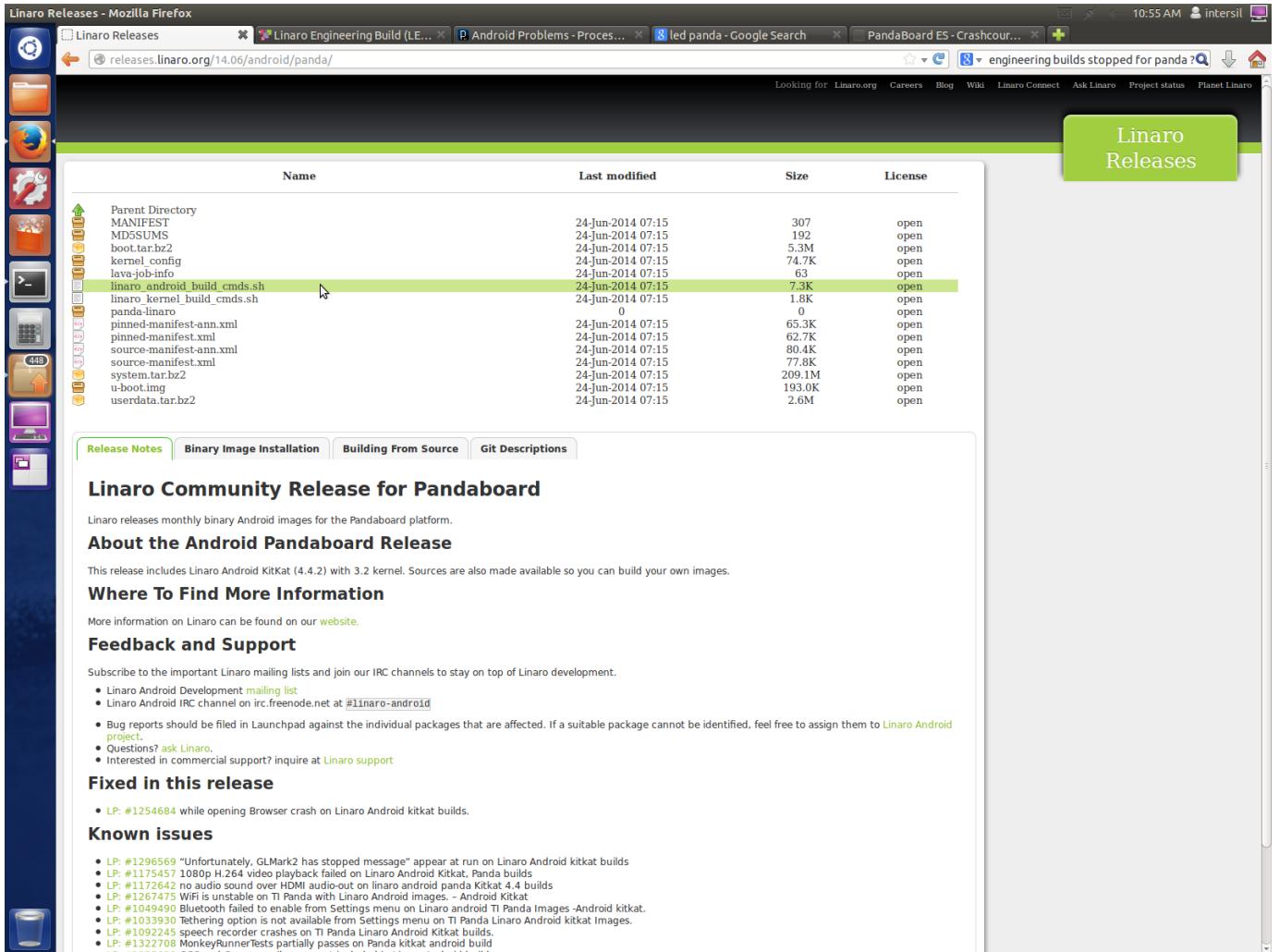
Components

Android

NAME	VERSION	RELEASE	DOWNLOADS	DETAILS
android-ndk	Revision 9d – 2014.06	14.06	[link]	-

STEP 3: The below page has information and files related to the latest android release for Pandaboard.

Figure : Release package for Pandaboard android



The screenshot shows a Mozilla Firefox browser window with the title "Linaro Releases - Mozilla Firefox". The address bar shows the URL "releases.linaro.org/14.06/android/panda/". The main content area displays a file list for the "linaro_android_build_cmds.sh" directory. The file list includes:

Name	Last modified	Size	License
Parent Directory			
MANIFEST	24-Jun-2014 07:15	307	open
MD5SUMS	24-Jun-2014 07:15	192	open
boot.tar.bz2	24-Jun-2014 07:15	5.3M	open
kernel_config	24-Jun-2014 07:15	74.7K	open
lava-job-info	24-Jun-2014 07:15	63	open
linaro_android_build_cmds.sh	24-Jun-2014 07:15	7.3K	open
linaro_kernel_build_cmds.sh	24-Jun-2014 07:15	1.8K	open
panda-linaro	0	0	open
pinned-manifest-ann.xml	24-Jun-2014 07:15	65.3K	open
pinned-manifest.xml	24-Jun-2014 07:15	62.7K	open
source-manifest-ann.xml	24-Jun-2014 07:15	80.4K	open
source-manifest.xml	24-Jun-2014 07:15	77.8K	open
system.tar.bz2	24-Jun-2014 07:15	209.1M	open
u-boot.img	24-Jun-2014 07:15	193.0K	open
userdata.tar.bz2	24-Jun-2014 07:15	2.6M	open

Below the file list, there are tabs for "Release Notes", "Binary Image Installation", "Building From Source", and "Git Descriptions". A green button labeled "Linaro Releases" is visible on the right side of the page. The browser status bar shows the time as 10:55 AM and the user as intersil.

STEP 4: Click on linaro_android_build_cmds.sh and save the script to an appropriate folder (for example Linaro-Android-14.06)

Figure : Prompt for saving linaro_android_build_cmds.sh

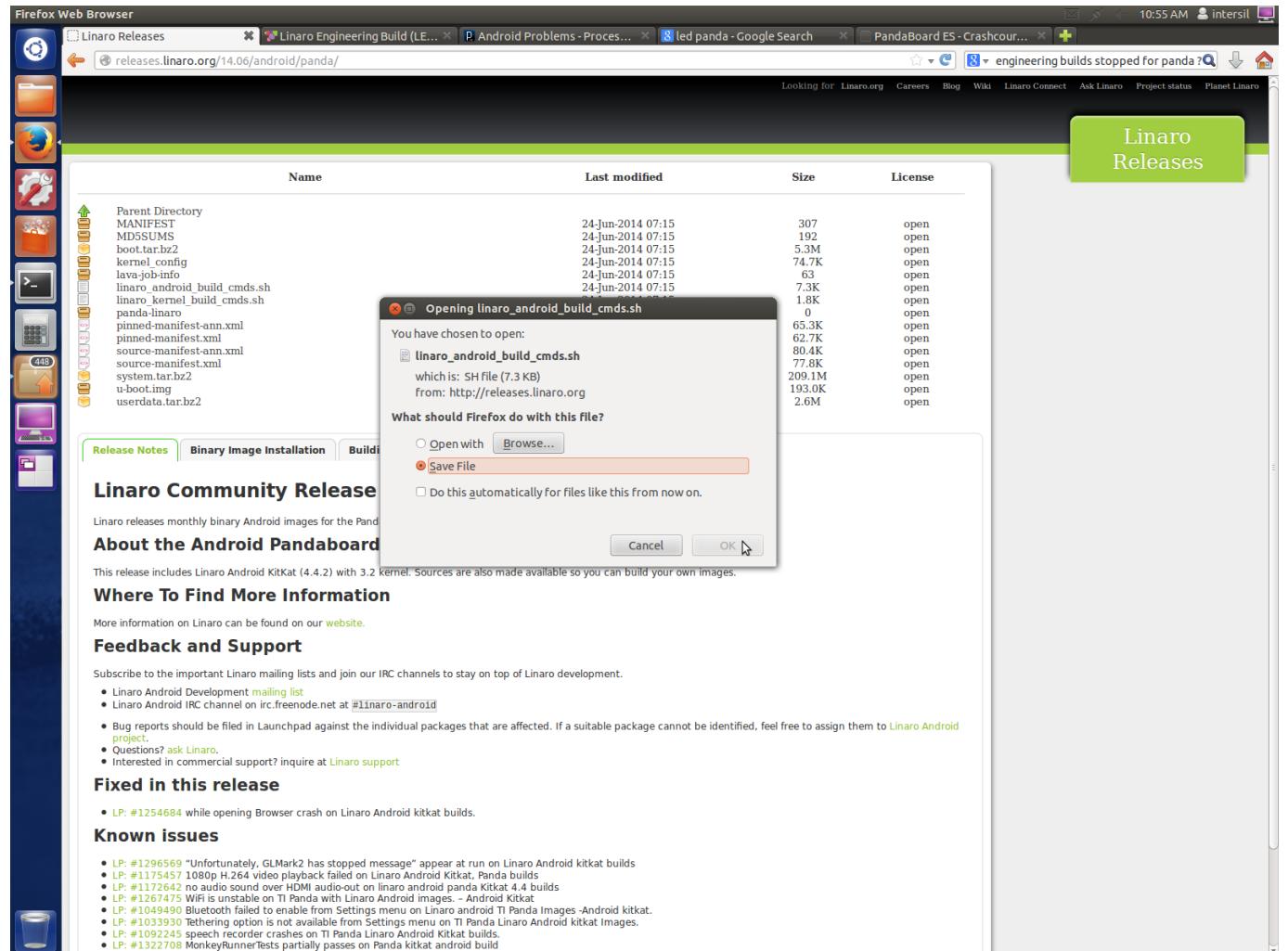


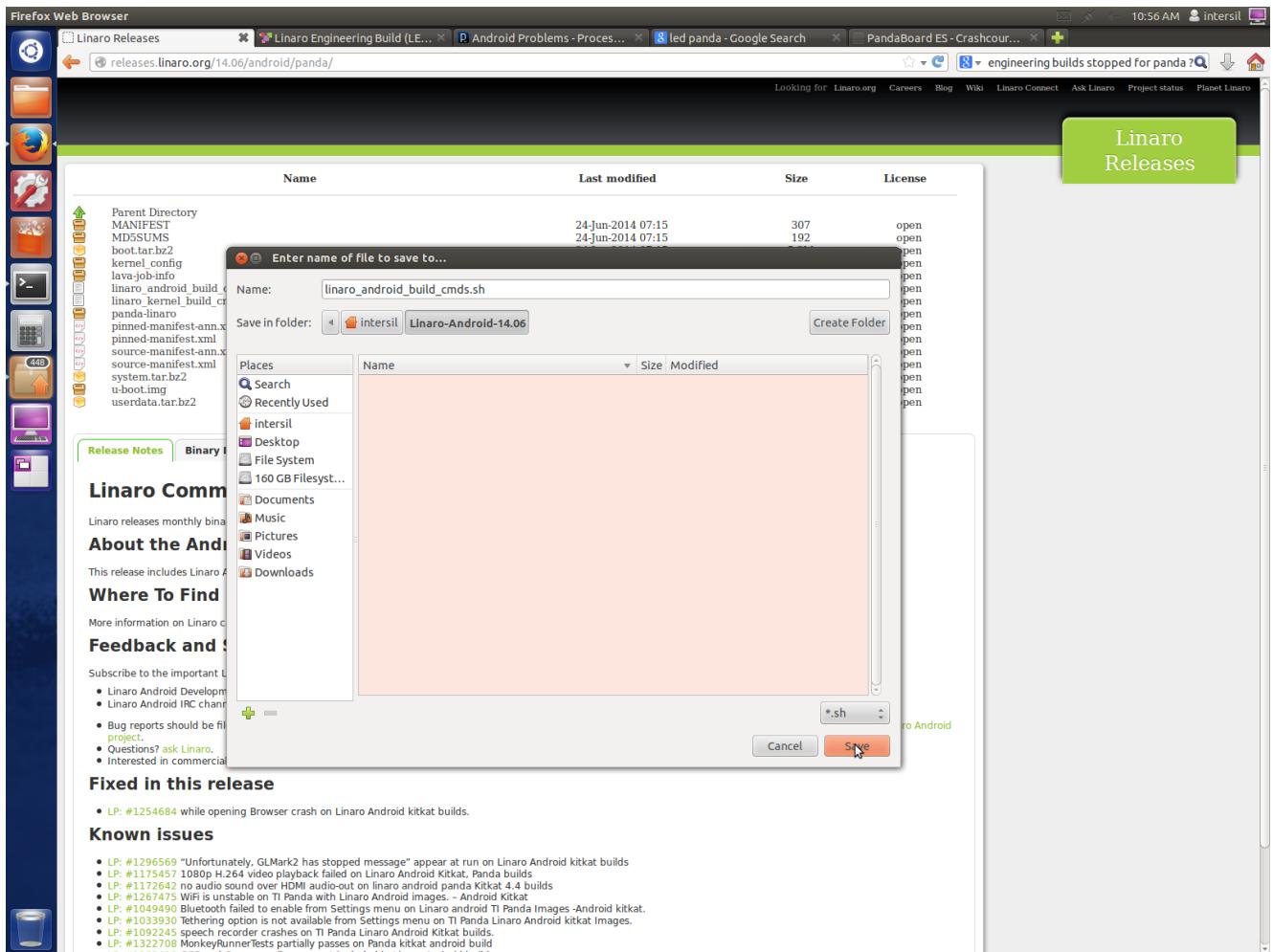
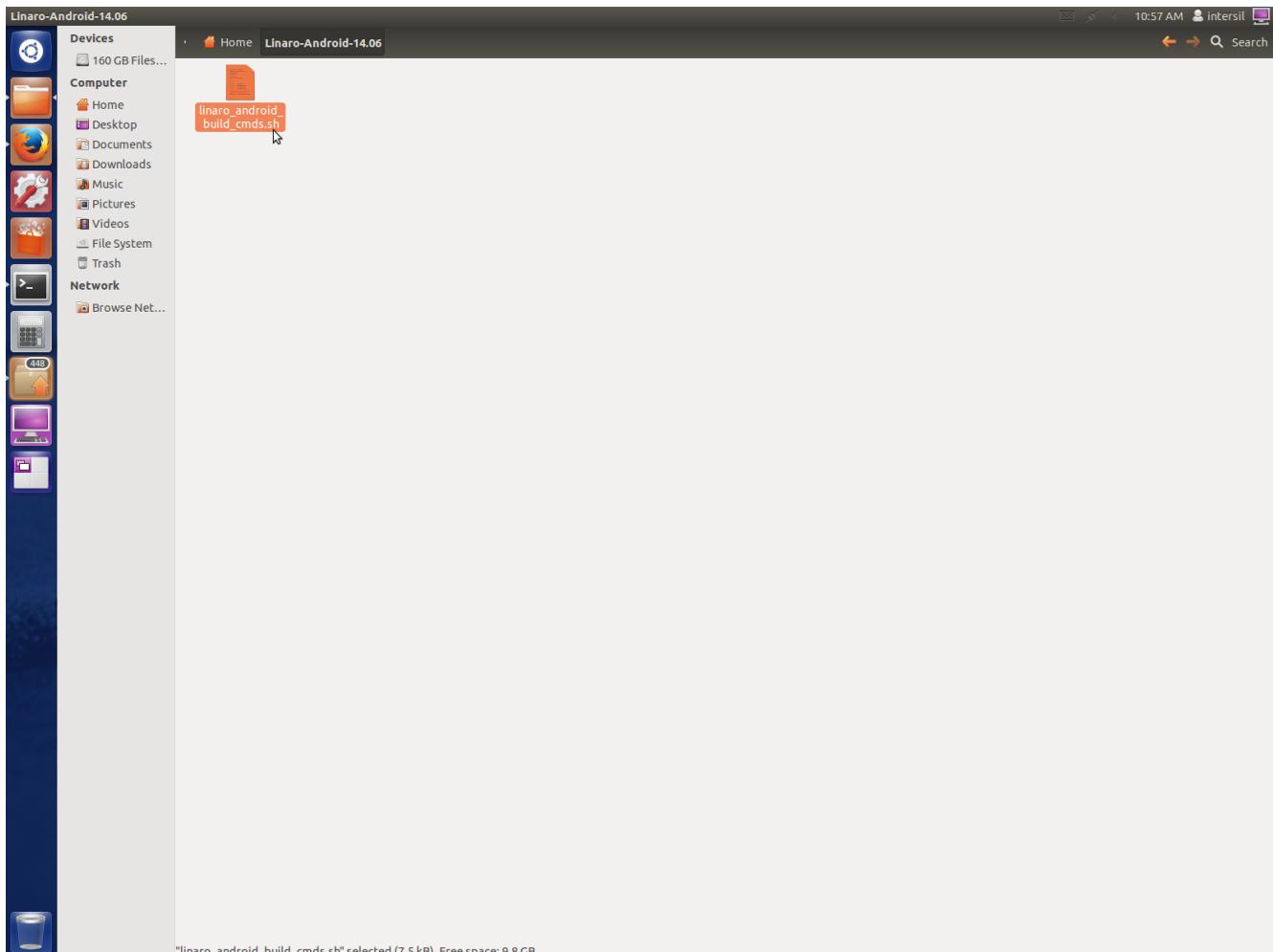
Figure : Save to location : linaro_android_build_cmds.sh


Figure : Verify download using File Explorer

STEP 5: Click on pinned-manifest.xml and save the script to the same folder where the linaro_android_build_cmds.sh was saved.

Figure : Prompt for saving pinned-manifest.xml

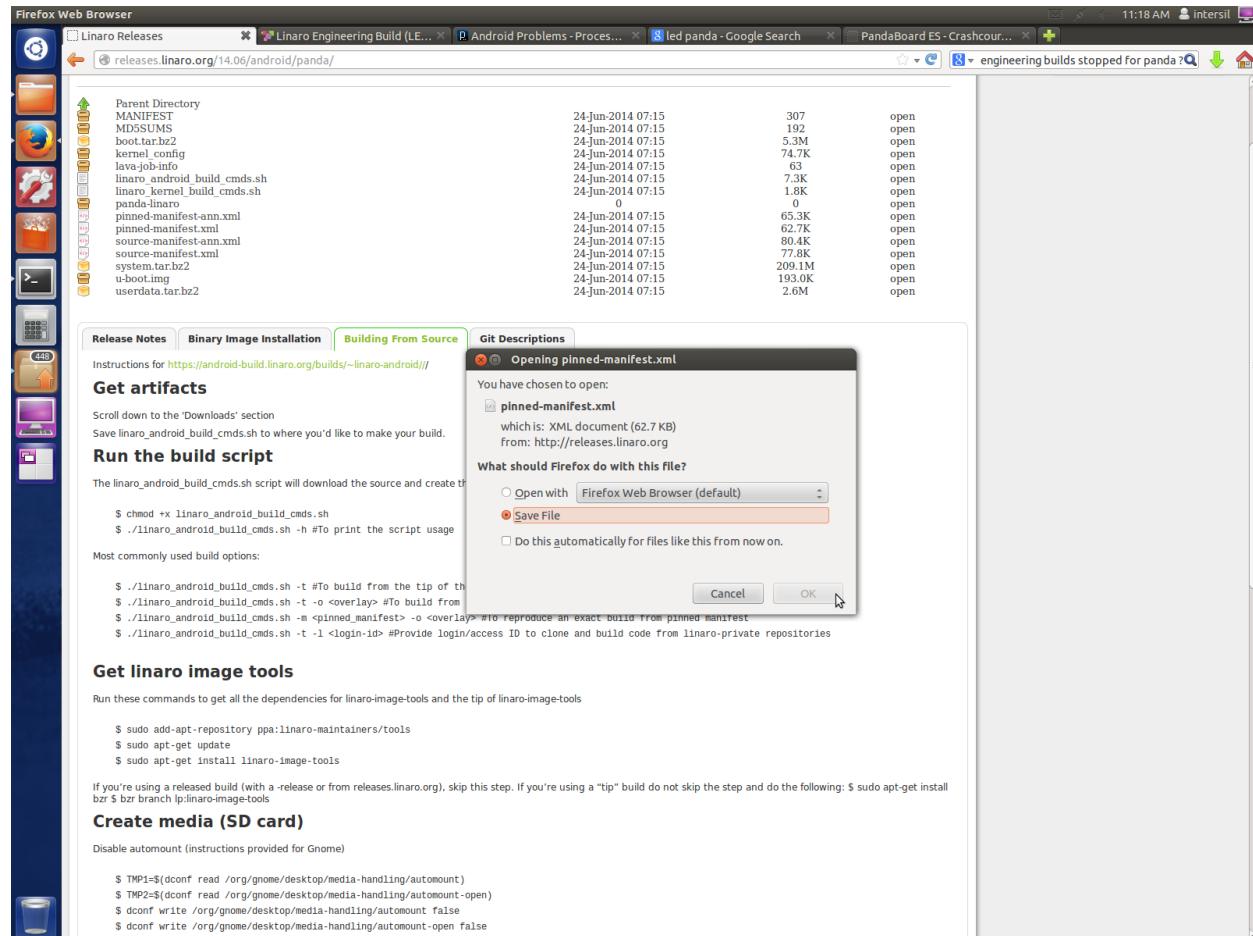


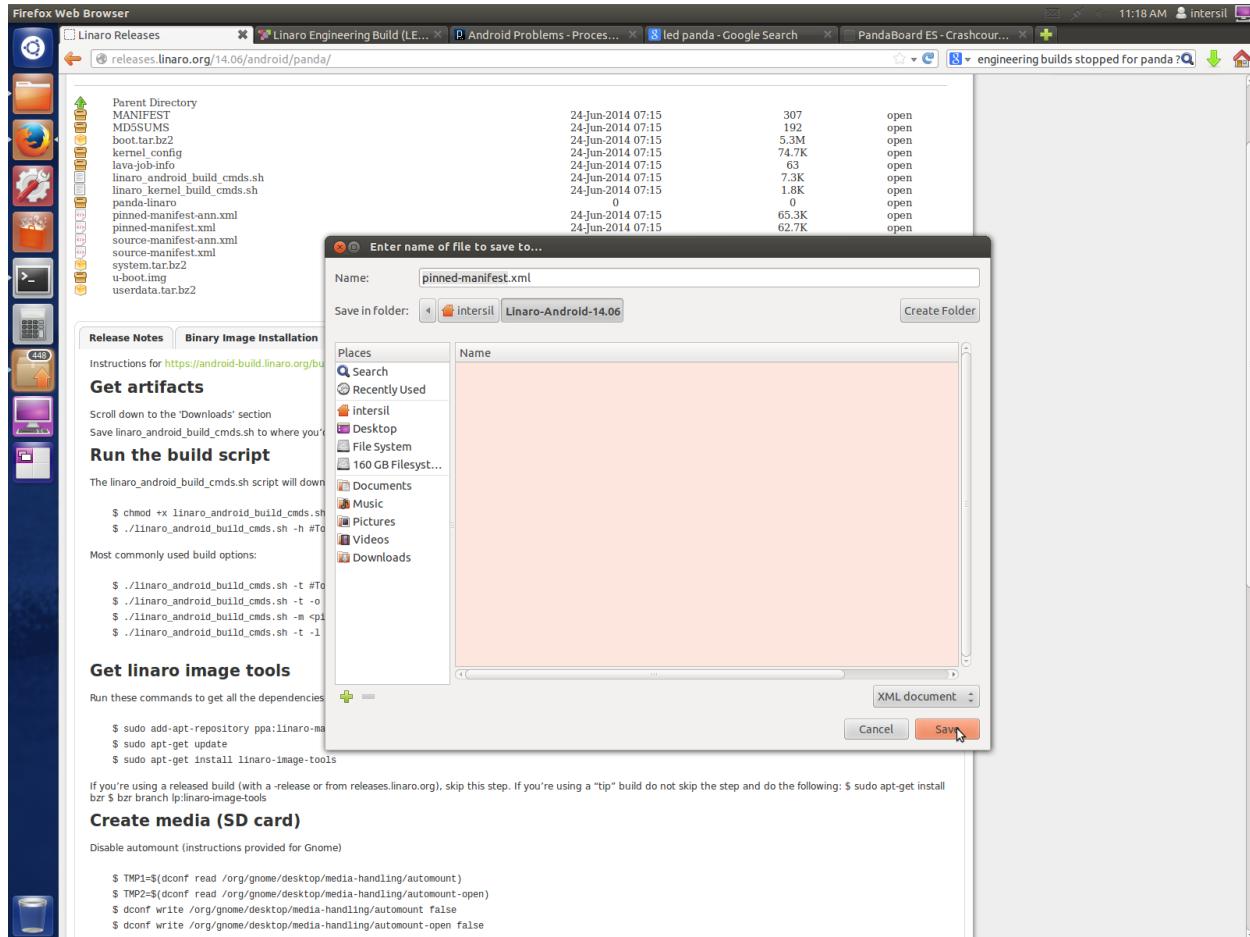
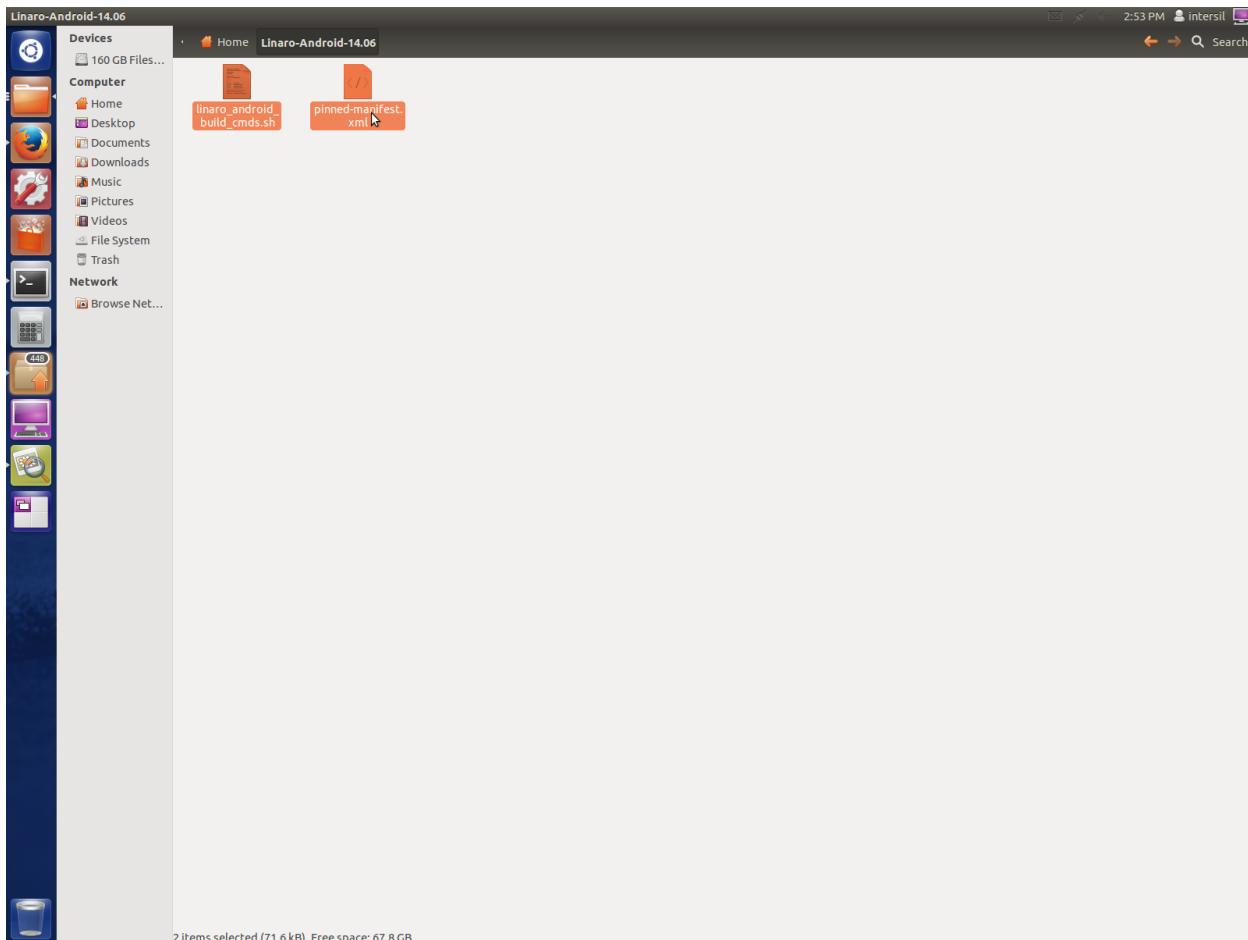
Figure : Save to location : pinned-manifest.xml


Figure : Verify download using File Explorer

At this point we have the necessary scripts to start fetching the required android source code.

STEP6: Open up a terminal and follow the below steps to invoke the fetching of the android source code.

1. Change directory to the path where the “linaro_android_build_cmds.sh” and “pinned-manifest.xml” were downloaded

```
$ cd </path/to/downloaded_scripts>
```

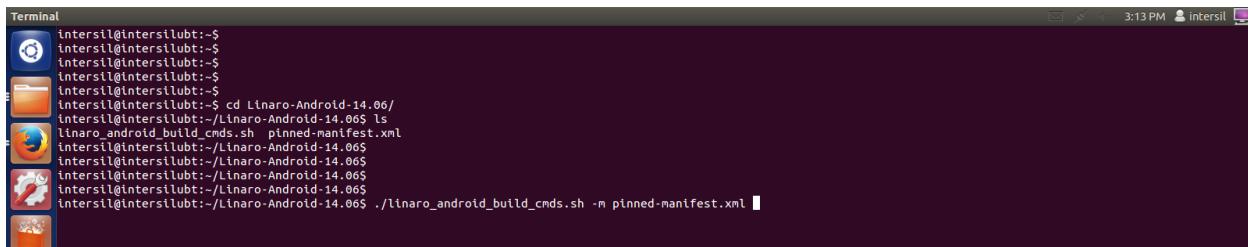
2. Make sure that the script has execution permission for the user if not use the below command

```
$ chmod u+x ./linaro_android_build_cmds.sh
```

3. Ensure that you have internet connectivity in the android build server machine and then use the below command to start fetching the android source code

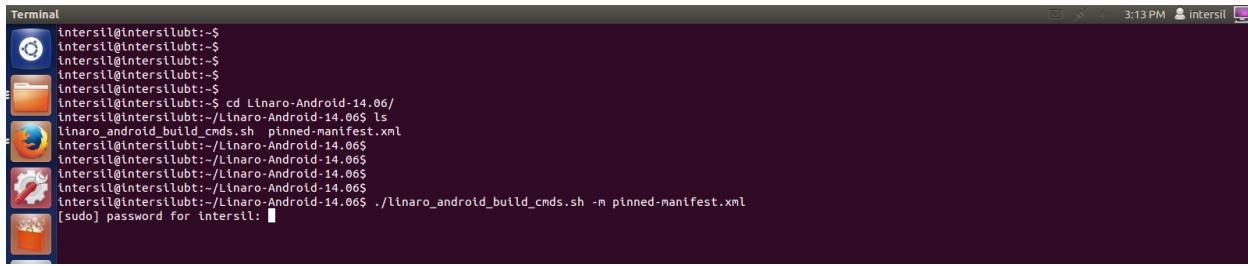
```
./linaro_android_build_cmds.sh -m pinned-manifest.xml
```

Figure : Execute android fetch and build script



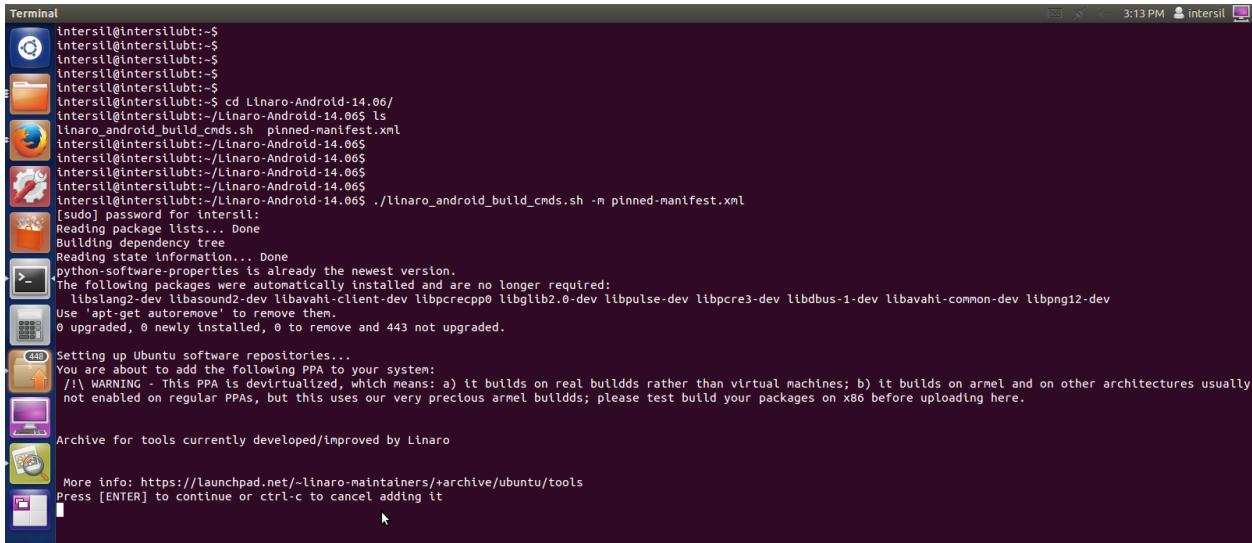
4. System would provide a password prompt, user shall enter his sudo password

Figure : Authenticate android fetch process



STEP7: Open up a terminal and follow the below steps to invoke the fetching of the android source code.

Figure : User response for setting up Ubuntu software repositories



```

Terminal
intersil@intersilubt:~$ 
intersil@intersilubt:~$ 
intersil@intersilubt:~$ 
intersil@intersilubt:~$ 
intersil@intersilubt:~$ cd Linaro-Android-14.06/
intersil@intersilubt:/Linaro-Android-14.06$ ls
linaro_android_build_cmds.sh pinned-manifest.xml
intersil@intersilubt:/Linaro-Android-14.06$ 
intersil@intersilubt:/Linaro-Android-14.06$ 
intersil@intersilubt:/Linaro-Android-14.06$ ./linaro_android_build_cmds.sh -m pinned-manifest.xml
[sudo] password for intersil:
Reading package lists... Done
Building dependency tree
Reading state information... Done
python-software-properties is already the newest version.
The following packages were automatically installed and are no longer required:
  libssl0.9.8-dev libasound2-dev libavahi-client-dev libpcrecpp0 libglib2.0-dev libpulse-dev libpcre3-dev libdbus-1-dev libavahi-common-dev libpng12-dev
Use 'apt-get autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 443 not upgraded.

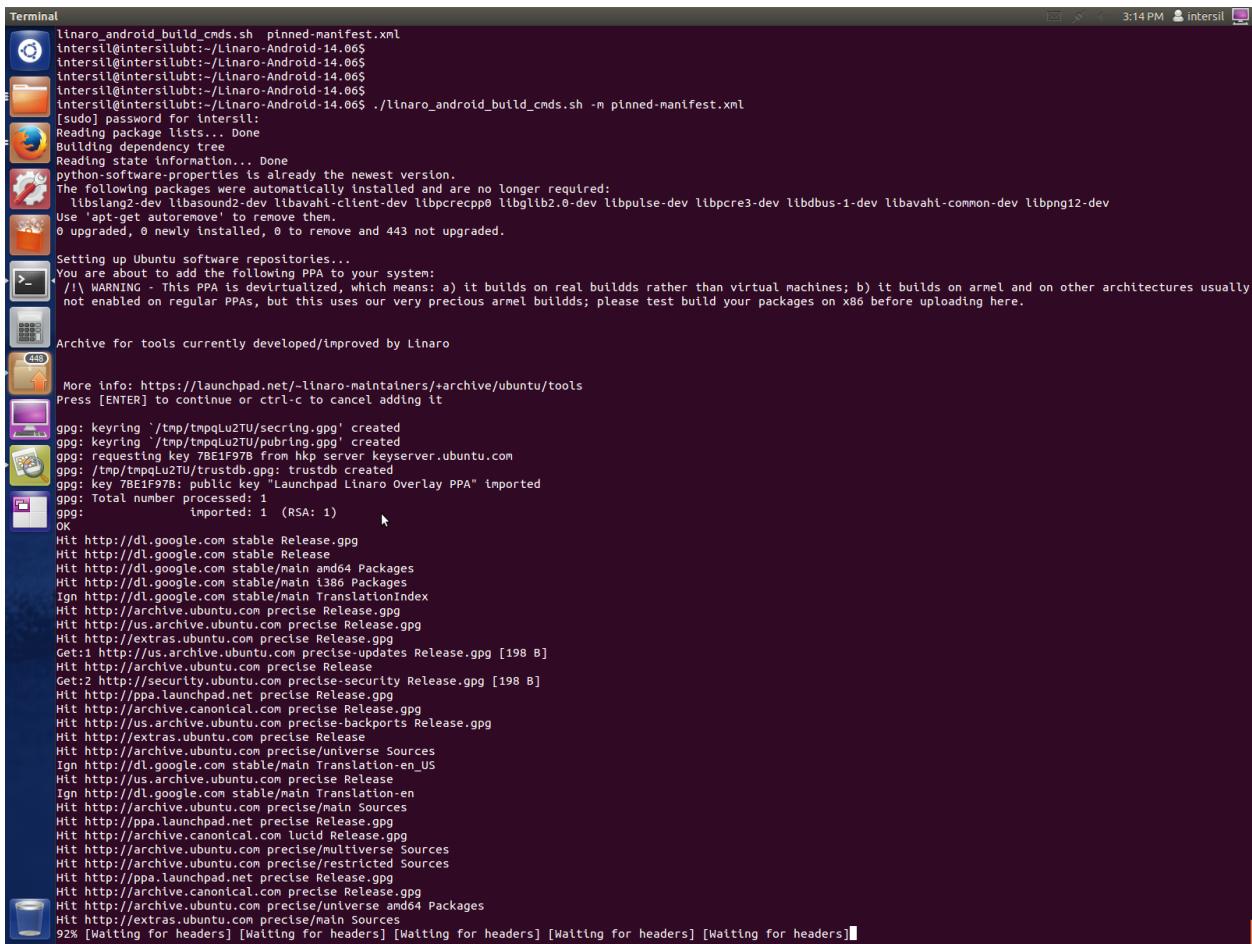
Setting up Ubuntu software repositories...
You are about to add the following PPA to your system:
  /!\\ WARNING - This PPA is devirtualized, which means: a) it builds on real buildds rather than virtual machines; b) it builds on armel and on other architectures usually not enabled on regular PPAs, but this uses our very precious armel buildds; please test build your packages on x86 before uploading here.

Archive for tools currently developed/improved by Linaro

More info: https://launchpad.net/~linaro-maintainers/+archive/ubuntu/tools
Press [ENTER] to continue or ctrl-c to cancel adding it

```

Figure : Ubuntu software update starts



```

Terminal
linaro_android_build_cmds.sh pinned-manifest.xml
intersil@intersilubt:/Linaro-Android-14.06$ 
intersil@intersilubt:/Linaro-Android-14.06$ 
intersil@intersilubt:/Linaro-Android-14.06$ 
intersil@intersilubt:/Linaro-Android-14.06$ ./linaro_android_build_cmds.sh -m pinned-manifest.xml
[sudo] password for intersil:
Reading package lists... Done
Building dependency tree
Reading state information... Done
python-software-properties is already the newest version.
The following packages were automatically installed and are no longer required:
  libssl0.9.8-dev libasound2-dev libavahi-client-dev libpcrecpp0 libglib2.0-dev libpulse-dev libpcre3-dev libdbus-1-dev libavahi-common-dev libpng12-dev
Use 'apt-get autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 443 not upgraded.

Setting up Ubuntu software repositories...
You are about to add the following PPA to your system:
  /!\\ WARNING - This PPA is devirtualized, which means: a) it builds on real buildds rather than virtual machines; b) it builds on armel and on other architectures usually not enabled on regular PPAs, but this uses our very precious armel buildds; please test build your packages on x86 before uploading here.

Archive for tools currently developed/improved by Linaro

More info: https://launchpad.net/~linaro-maintainers/+archive/ubuntu/tools
Press [ENTER] to continue or ctrl-c to cancel adding it

gpg: keyring '/tmp/tmpqlu2TU/secring.gpg' created
gpg: keyring '/tmp/tmpqlu2TU/pubring.gpg' created
gpg: requesting key 7BE1F97B from hkp server keyserver.ubuntu.com
gpg: /tmp/tmpqlu2TU/trustdb.gpg: trustdb created
gpg: key 7BE1F97B: public key "Launchpad Linaro Overlay PPA" imported
gpg: Total number processed: 1
gpg:           imported: 1 (RSA: 1)
OK
Hit http://dl.google.com stable Release.gpg
Hit http://dl.google.com stable Release
Hit http://dl.google.com stable/main amd64 Packages
Hit http://dl.google.com stable/main i386 Packages
Ign http://dl.google.com stable/main TranslationIndex
Hit http://archive.ubuntu.com precise Release.gpg
Hit http://us.archive.ubuntu.com precise Release.gpg
Hit http://extras.ubuntu.com precise Release.gpg
Get:1 http://us.archive.ubuntu.com precise-updates Release.gpg [198 B]
Hit http://archive.ubuntu.com precise Release
Get:2 http://security.ubuntu.com precise-security Release.gpg [198 B]
Hit http://ppa.launchpad.net precise Release.gpg
Hit http://archive.canonical.com precise Release.gpg
Hit http://us.archive.ubuntu.com precise-backports Release.gpg
Hit http://extras.ubuntu.com precise Release
Hit http://archive.ubuntu.com precise/universe Sources
Ign http://dl.google.com stable/main Translation-en_US
Hit http://us.archive.ubuntu.com precise Release
Ign http://dl.google.com stable/main Translation-en
Hit http://archive.ubuntu.com precise/main Sources
Hit http://ppa.launchpad.net precise Release.gpg
Hit http://archive.canonical.com lucid Release.gpg
Hit http://archive.ubuntu.com precise/multiverse Sources
Hit http://archive.ubuntu.com precise/restricted Sources
Hit http://ppa.launchpad.net precise Release.gpg
Hit http://archive.canonical.com precise Release.gpg
Hit http://archive.ubuntu.com precise/universe amd64 Packages
Hit http://extras.ubuntu.com precise/main Sources
92% [Waiting for headers] [Waiting for headers] [Waiting for headers] [Waiting for headers]
```

STEP 8: Give the confirmation as yes for fetching the Ubuntu archives

Figure : Confirmation for fetching Ubuntu archives

Terminal

```

Hit http://us.archive.ubuntu.com precise-backports/restricted i386 Packages
Hit http://us.archive.ubuntu.com precise-backports/universe i386 Packages
Hit http://us.archive.ubuntu.com precise-backports/multiverse i386 Packages
Hit http://us.archive.ubuntu.com precise-backports/main TranslationIndex
Hit http://us.archive.ubuntu.com precise-backports/multiverse TranslationIndex
Hit http://us.archive.ubuntu.com precise-backports/restricted TranslationIndex
Hit http://us.archive.ubuntu.com precise-backports/universe TranslationIndex
Hit http://us.archive.ubuntu.com precise/main Translation-en
Hit http://us.archive.ubuntu.com precise/multiverse Translation-en
Hit http://us.archive.ubuntu.com precise/restricted Translation-en
Hit http://us.archive.ubuntu.com precise/universe Translation-en
Hit http://us.archive.ubuntu.com precise-updates/main Translation-en
Hit http://us.archive.ubuntu.com precise-updates/multiverse Translation-en
Hit http://us.archive.ubuntu.com precise-updates/restricted Translation-en
Hit http://us.archive.ubuntu.com precise-updates/universe Translation-en
Hit http://archive.ubuntu.com precise-backports/main Translation-en
Hit http://archive.ubuntu.com precise-backports/multiverse Translation-en
Hit http://archive.ubuntu.com precise-backports/restricted Translation-en
Hit http://archive.ubuntu.com precise-backports/universe Translation-en
Fetched 3,395 kB in 23s (145 kB/s)
Reading package lists... Done

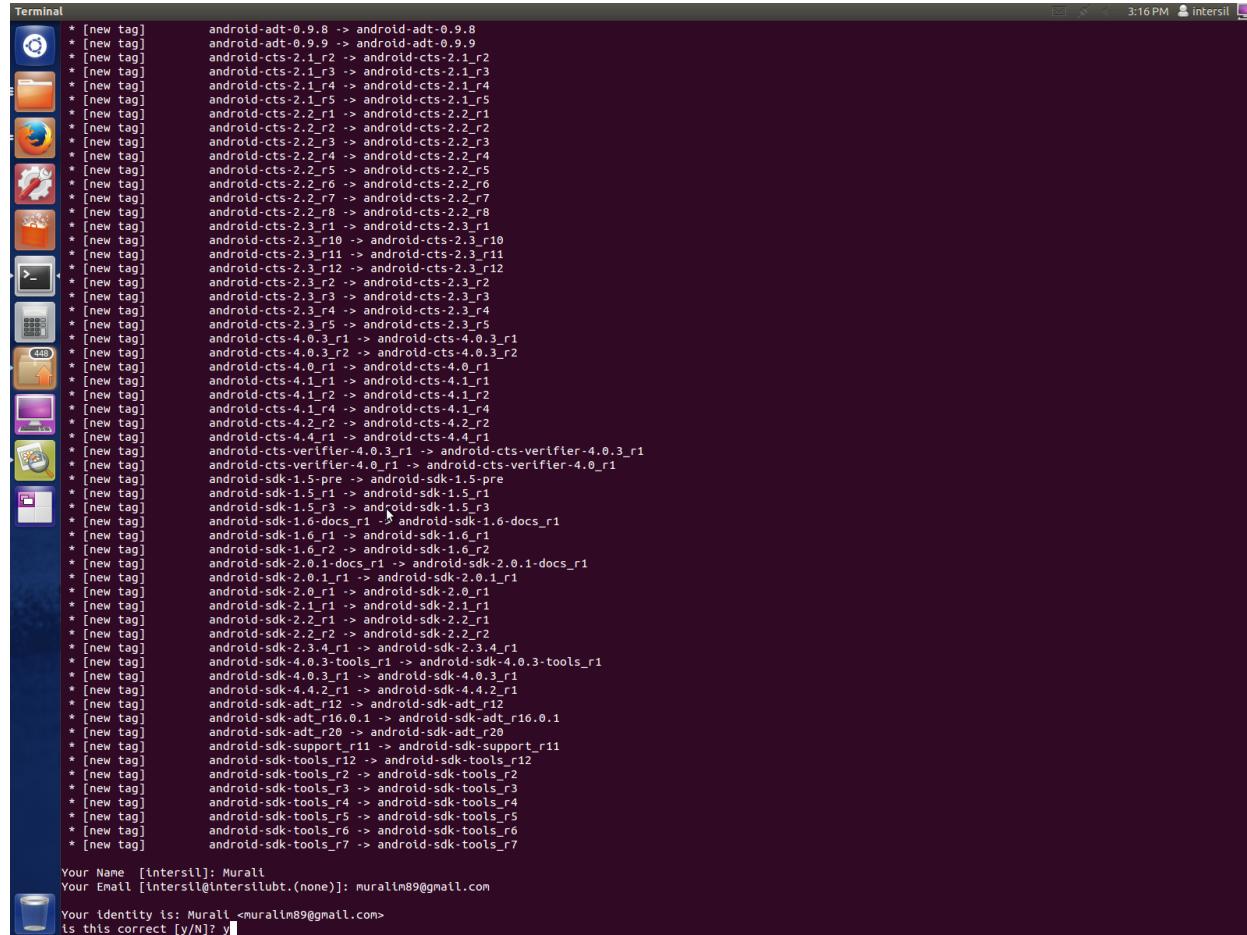
Installing missing dependencies if any...
Reading package lists... Done
Building dependency tree
Reading state information... Done
bison is already the newest version.
flex is already the newest version.
g++-multilib is already the newest version.
git-core is already the newest version.
gperf is already the newest version.
lib32ncurses5-dev is already the newest version.
lib32z1-dev is already the newest version.
python-yaml is already the newest version.
tortoises is already the newest version.
uboot-mkimage is already the newest version.
zip is already the newest version.
zlibbig-dev is already the newest version.
mingw32 is already the newest version.
python-markdown is already the newest version.
python-parted is already the newest version.
libstdc++6:i386 is already the newest version.
build-essential is already the newest version.
curl is already the newest version.
gnupg is already the newest version.
libc6-dev is already the newest version.
libgl1-mesa-dev is already the newest version.
libx11-dev is already the newest version.
libxml2-utils is already the newest version.
openjdk-6-jdk is already the newest version.
openjdk-6-jre is already the newest version.
uuid-dev is already the newest version.
vim-common is already the newest version.
x11proto-core-dev is already the newest version.
xsllibproc is already the newest version.
acpi-tools is already the newest version.

The following packages were automatically installed and are no longer required:
libslang2-dev libasound2-dev libvahai-client-dev libpcrcpp0 libglib2.0-dev libpulse-dev libpcres3-dev libdbus-1-dev libvahai-common-dev libpng12-dev
Use 'apt-get autoremove' to remove them.
The following packages will be upgraded:
wget
1 upgraded, 0 newly installed, 0 to remove and 442 not upgraded.
Need to get 279 kB of archives.
After this operation, 4,096 B disk space will be freed.
Do you want to continue [Y/n]? ■

```

STEP 9: During fetch process user would be prompted to provide username and e-mail id information. Provide the same and confirm identity.

Figure : Enter personal details



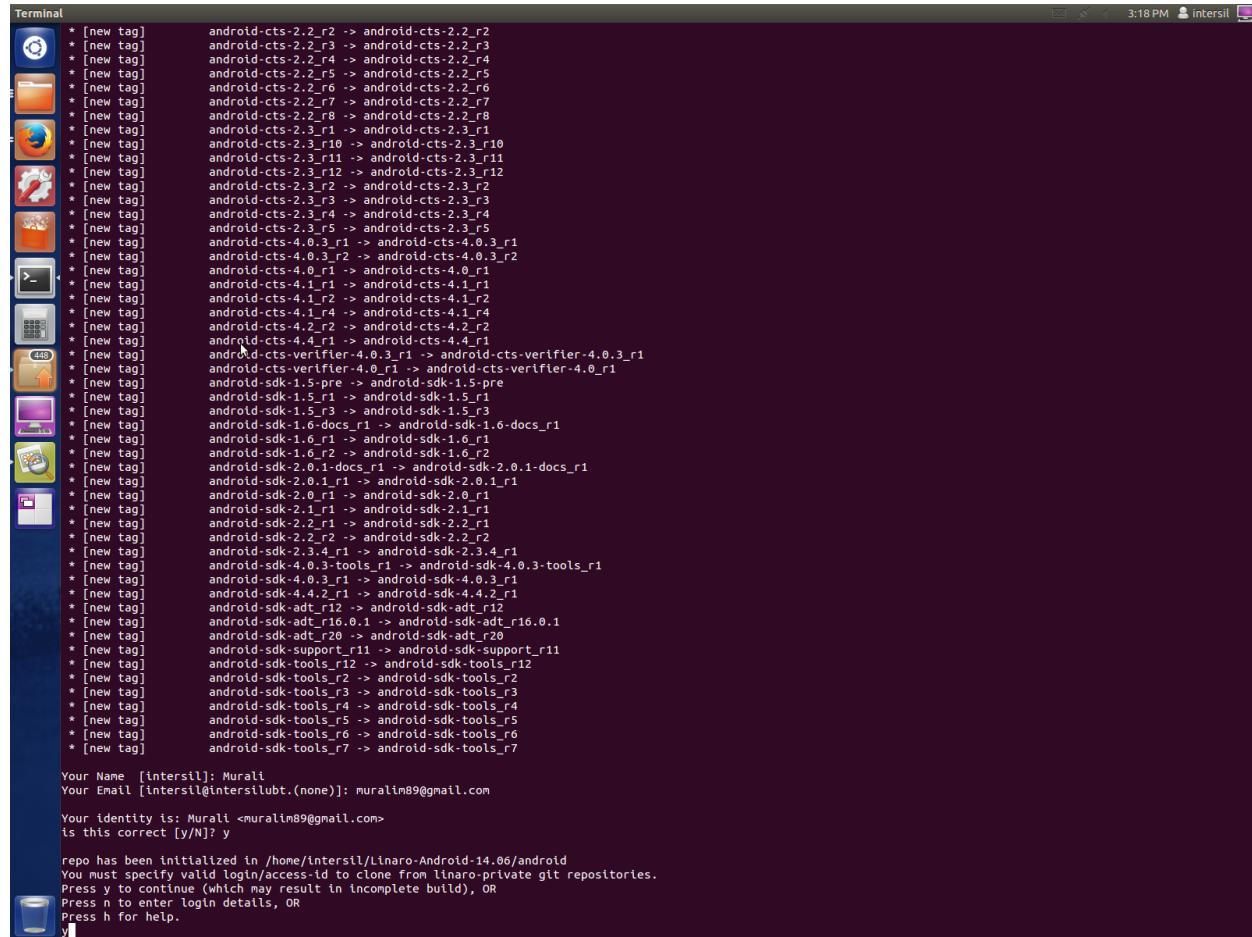
```
Terminal 3:16 PM intersil [~]
* [new tag]      android-adt-0.9.8 -> android-adt-0.9.8
* [new tag]      android-adt-0.9.9 -> android-adt-0.9.9
* [new tag]      android-cts-2.1_r2 -> android-cts-2.1_r2
* [new tag]      android-cts-2.1_r3 -> android-cts-2.1_r3
* [new tag]      android-cts-2.1_r4 -> android-cts-2.1_r4
* [new tag]      android-cts-2.1_r5 -> android-cts-2.1_r5
* [new tag]      android-cts-2.2_r1 -> android-cts-2.2_r1
* [new tag]      android-cts-2.2_r2 -> android-cts-2.2_r2
* [new tag]      android-cts-2.2_r3 -> android-cts-2.2_r3
* [new tag]      android-cts-2.2_r4 -> android-cts-2.2_r4
* [new tag]      android-cts-2.2_r5 -> android-cts-2.2_r5
* [new tag]      android-cts-2.2_r6 -> android-cts-2.2_r6
* [new tag]      android-cts-2.2_r7 -> android-cts-2.2_r7
* [new tag]      android-cts-2.2_r8 -> android-cts-2.2_r8
* [new tag]      android-cts-2.3_r1 -> android-cts-2.3_r1
* [new tag]      android-cts-2.3_r10 -> android-cts-2.3_r10
* [new tag]      android-cts-2.3_r11 -> android-cts-2.3_r11
* [new tag]      android-cts-2.3_r12 -> android-cts-2.3_r12
* [new tag]      android-cts-2.3_r2 -> android-cts-2.3_r2
* [new tag]      android-cts-2.3_r3 -> android-cts-2.3_r3
* [new tag]      android-cts-2.3_r4 -> android-cts-2.3_r4
* [new tag]      android-cts-2.3_r5 -> android-cts-2.3_r5
* [new tag]      android-cts-4.0.3_r1 -> android-cts-4.0.3_r1
* [new tag]      android-cts-4.0.3_r2 -> android-cts-4.0.3_r2
* [new tag]      android-cts-4.0_r1 -> android-cts-4.0_r1
* [new tag]      android-cts-4.1_r1 -> android-cts-4.1_r1
* [new tag]      android-cts-4.1_r2 -> android-cts-4.1_r2
* [new tag]      android-cts-4.1_r4 -> android-cts-4.1_r4
* [new tag]      android-cts-4.2_r2 -> android-cts-4.2_r2
* [new tag]      android-cts-4.4_r1 -> android-cts-4.4_r1
* [new tag]      android-cts-verifier-4.0.3_r1 -> android-cts-verifier-4.0.3_r1
* [new tag]      android-cts-verifier-4.0_r1 -> android-cts-verifier-4.0_r1
* [new tag]      android-sdk-1.5-pre -> android-sdk-1.5-pre
* [new tag]      android-sdk-1.5_r1 -> android-sdk-1.5_r1
* [new tag]      android-sdk-1.5_r3 -> android-sdk-1.5_r3
* [new tag]      android-sdk-1.6_docs_r1 -> android-sdk-1.6-docs_r1
* [new tag]      android-sdk-1.6_r1 -> android-sdk-1.6_r1
* [new tag]      android-sdk-1.6_r2 -> android-sdk-1.6_r2
* [new tag]      android-sdk-2.0.1-docs_r1 -> android-sdk-2.0.1-docs_r1
* [new tag]      android-sdk-2.0.1_r1 -> android-sdk-2.0.1_r1
* [new tag]      android-sdk-2.0_r1 -> android-sdk-2.0_r1
* [new tag]      android-sdk-2.1_r1 -> android-sdk-2.1_r1
* [new tag]      android-sdk-2.2_r1 -> android-sdk-2.2_r1
* [new tag]      android-sdk-2.2_r2 -> android-sdk-2.2_r2
* [new tag]      android-sdk-2.3_r1 -> android-sdk-2.3_r1
* [new tag]      android-sdk-4.0.3-tools_r1 -> android-sdk-4.0.3-tools_r1
* [new tag]      android-sdk-4.0.3_r1 -> android-sdk-4.0.3_r1
* [new tag]      android-sdk-4.4_r2 -> android-sdk-4.4_r2
* [new tag]      android-sdk-adt_r12 -> android-sdk-adt_r12
* [new tag]      android-sdk-adt_r16_0.1 -> android-sdk-adt_r16_0.1
* [new tag]      android-sdk-adt_r20 -> android-sdk-adt_r20
* [new tag]      android-sdk-support_r11 -> android-sdk-support_r11
* [new tag]      android-sdk-tools_r12 -> android-sdk-tools_r12
* [new tag]      android-sdk-tools_r2 -> android-sdk-tools_r2
* [new tag]      android-sdk-tools_r3 -> android-sdk-tools_r3
* [new tag]      android-sdk-tools_r4 -> android-sdk-tools_r4
* [new tag]      android-sdk-tools_r5 -> android-sdk-tools_r5
* [new tag]      android-sdk-tools_r6 -> android-sdk-tools_r6
* [new tag]      android-sdk-tools_r7 -> android-sdk-tools_r7
```

Your Name [intersil]: Murali
Your Email [intersil@Intersilubt.(none)]: muralim89@gmail.com

Your Identity is: Murali <muralim89@gmail.com>
Is this correct [y/N]? y

STEP 10: When prompted with a question as shown in below figure, enter 'y' as option and proceed.

Figure : User confirmation for Linaro private repositories



```

Terminal
* [new tag]      android-cts-2.2_r2 -> android-cts-2.2_r2
* [new tag]      android-cts-2.2_r3 -> android-cts-2.2_r3
* [new tag]      android-cts-2.2_r4 -> android-cts-2.2_r4
* [new tag]      android-cts-2.2_r5 -> android-cts-2.2_r5
* [new tag]      android-cts-2.2_r6 -> android-cts-2.2_r6
* [new tag]      android-cts-2.2_r7 -> android-cts-2.2_r7
* [new tag]      android-cts-2.2_r8 -> android-cts-2.2_r8
* [new tag]      android-cts-2.3_r1 -> android-cts-2.3_r1
* [new tag]      android-cts-2.3_r10 -> android-cts-2.3_r10
* [new tag]      android-cts-2.3_r11 -> android-cts-2.3_r11
* [new tag]      android-cts-2.3_r12 -> android-cts-2.3_r12
* [new tag]      android-cts-2.3_r2 -> android-cts-2.3_r2
* [new tag]      android-cts-2.3_r3 -> android-cts-2.3_r3
* [new tag]      android-cts-2.3_r4 -> android-cts-2.3_r4
* [new tag]      android-cts-2.3_r5 -> android-cts-2.3_r5
* [new tag]      android-cts-4.0.3_r1 -> android-cts-4.0.3_r1
* [new tag]      android-cts-4.0.3_r2 -> android-cts-4.0.3_r2
* [new tag]      android-cts-4.0_r1 -> android-cts-4.0_r1
* [new tag]      android-cts-4.1_r1 -> android-cts-4.1_r1
* [new tag]      android-cts-4.1_r2 -> android-cts-4.1_r2
* [new tag]      android-cts-4.1_r4 -> android-cts-4.1_r4
* [new tag]      android-cts-4.2_r2 -> android-cts-4.2_r2
* [new tag]      android-cts-4.4_r1 -> android-cts-4.4_r1
* [new tag]      android-cts-verifier-4.0_3_r1 -> android-cts-verifier-4.0_3_r1
* [new tag]      android-cts-verifier-4.0_r1 -> android-cts-verifier-4.0_r1
* [new tag]      android-sdk-1.5_pre -> android-sdk-1.5_pre
* [new tag]      android-sdk-1.5_r1 -> android-sdk-1.5_r1
* [new tag]      android-sdk-1.5_r3 -> android-sdk-1.5_r3
* [new tag]      android-sdk-1.6_docs_r1 -> android-sdk-1.6-docs_r1
* [new tag]      android-sdk-1.6_r1 -> android-sdk-1.6_r1
* [new tag]      android-sdk-1.6_r2 -> android-sdk-1.6_r2
* [new tag]      android-sdk-2.0.1-docs_r1 -> android-sdk-2.0.1-docs_r1
* [new tag]      android-sdk-2.0.1_r1 -> android-sdk-2.0.1_r1
* [new tag]      android-sdk-2.0_r1 -> android-sdk-2.0_r1
* [new tag]      android-sdk-2.1_r1 -> android-sdk-2.1_r1
* [new tag]      android-sdk-2.2_r1 -> android-sdk-2.2_r1
* [new tag]      android-sdk-2.2_r2 -> android-sdk-2.2_r2
* [new tag]      android-sdk-2.3_4_r1 -> android-sdk-2.3_4_r1
* [new tag]      android-sdk-4.0.3-tools_r1 -> android-sdk-4.0.3-tools_r1
* [new tag]      android-sdk-4.0.3_r1 -> android-sdk-4.0.3_r1
* [new tag]      android-sdk-4.4.2_r1 -> android-sdk-4.4.2_r1
* [new tag]      android-sdk-adt_r12 -> android-sdk-adt_r12
* [new tag]      android-sdk-adt_r16_0.1 -> android-sdk-adt_r16_0.1
* [new tag]      android-sdk-adt_r20 -> android-sdk-adt_r20
* [new tag]      android-sdk-support_r11 -> android-sdk-support_r11
* [new tag]      android-sdk-tools_r12 -> android-sdk-tools_r12
* [new tag]      android-sdk-tools_r2 -> android-sdk-tools_r2
* [new tag]      android-sdk-tools_r3 -> android-sdk-tools_r3
* [new tag]      android-sdk-tools_r4 -> android-sdk-tools_r4
* [new tag]      android-sdk-tools_r5 -> android-sdk-tools_r5
* [new tag]      android-sdk-tools_r6 -> android-sdk-tools_r6
* [new tag]      android-sdk-tools_r7 -> android-sdk-tools_r7

Your Name [intersil]: Murali
Your Email [intersil@intersilubt.(none)]: muralim89@gmail.com

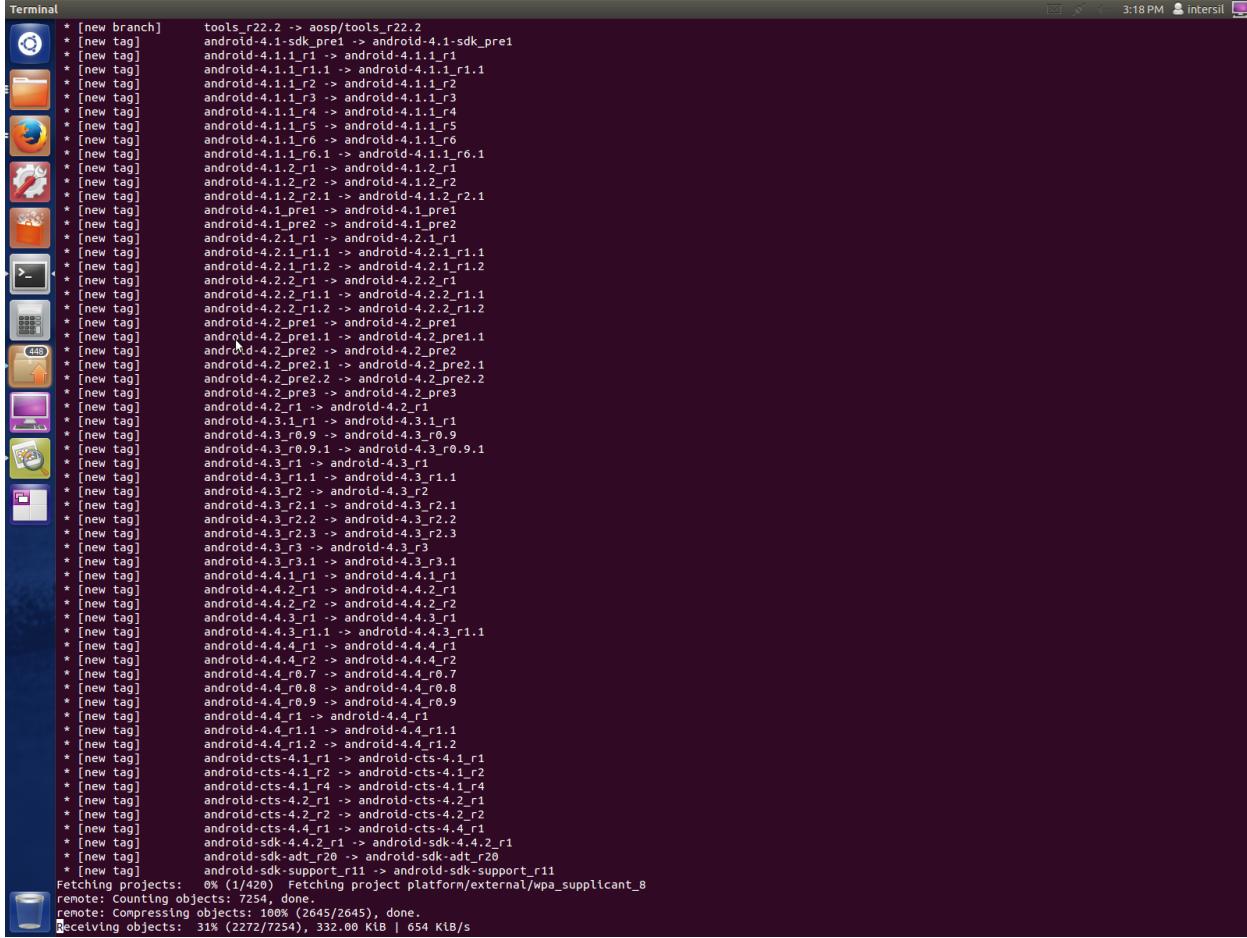
Your identity is: Murali <muralim89@gmail.com>
is this correct [y/N]? y

repo has been initialized in /home/intersil/Linaro-Android-14.06/android
You must specify valid login/access-id to clone from linaro-private git repositories.
Press y to continue (which may result in incomplete build), OR
Press n to enter login details, OR
Press h for help.

y

```

Figure : Android source code fetch starts



```
* [new branch]      tools_r22.2 -> aosp/tools_r22.2
* [new tag]        android-4.1-sdk_pre1 -> android-4.1-sdk_pre1
* [new tag]        android-4.1.1_r1 -> android-4.1.1_r1
* [new tag]        android-4.1.1_r1.1 -> android-4.1.1_r1.1
* [new tag]        android-4.1.1_r2 -> android-4.1.1_r2
* [new tag]        android-4.1.1_r3 -> android-4.1.1_r3
* [new tag]        android-4.1.1_r4 -> android-4.1.1_r4
* [new tag]        android-4.1.1_r5 -> android-4.1.1_r5
* [new tag]        android-4.1.1_r6 -> android-4.1.1_r6
* [new tag]        android-4.1.1_r6.1 -> android-4.1.1_r6.1
* [new tag]        android-4.1.2_r1 -> android-4.1.2_r1
* [new tag]        android-4.1.2_r2 -> android-4.1.2_r2
* [new tag]        android-4.1.2_r2.1 -> android-4.1.2_r2.1
* [new tag]        android-4.1_pre1 -> android-4.1_pre1
* [new tag]        android-4.1_pre2 -> android-4.1_pre2
* [new tag]        android-4.2.1_r1 -> android-4.2.1_r1
* [new tag]        android-4.2.1_r1.1 -> android-4.2.1_r1.1
* [new tag]        android-4.2.1_r1.2 -> android-4.2.1_r1.2
* [new tag]        android-4.2.2_r1 -> android-4.2.2_r1
* [new tag]        android-4.2.2_r1.1 -> android-4.2.2_r1.1
* [new tag]        android-4.2.2_r1.2 -> android-4.2.2_r1.2
* [new tag]        android-4.2_pre1 -> android-4.2_pre1
* [new tag]        android-4.2_pre1.1 -> android-4.2_pre1.1
* [new tag]        android-4.2_pre2 -> android-4.2_pre2
* [new tag]        android-4.2_pre2.1 -> android-4.2_pre2.1
* [new tag]        android-4.2_pre2.2 -> android-4.2_pre2.2
* [new tag]        android-4.2_pre3 -> android-4.2_pre3
* [new tag]        android-4.2_r1 -> android-4.2_r1
* [new tag]        android-4.3.1_r1 -> android-4.3.1_r1
* [new tag]        android-4.3_r0.9 -> android-4.3_r0.9
* [new tag]        android-4.3_r0.9.1 -> android-4.3_r0.9.1
* [new tag]        android-4.3_r1 -> android-4.3_r1
* [new tag]        android-4.3_r1.1 -> android-4.3_r1.1
* [new tag]        android-4.3_r2 -> android-4.3_r2
* [new tag]        android-4.3_r2.1 -> android-4.3_r2.1
* [new tag]        android-4.3_r2.2 -> android-4.3_r2.2
* [new tag]        android-4.3_r2.3 -> android-4.3_r2.3
* [new tag]        android-4.3_r3 -> android-4.3_r3
* [new tag]        android-4.3_r3.1 -> android-4.3_r3.1
* [new tag]        android-4.4.1_r1 -> android-4.4.1_r1
* [new tag]        android-4.4.2_r1 -> android-4.4.2_r1
* [new tag]        android-4.4.3_r1 -> android-4.4.3_r1
* [new tag]        android-4.4.3_r1.1 -> android-4.4.3_r1.1
* [new tag]        android-4.4.4_r1 -> android-4.4.4_r1
* [new tag]        android-4.4.4_r2 -> android-4.4.4_r2
* [new tag]        android-4.4_r0.7 -> android-4.4_r0.7
* [new tag]        android-4.4_r0.8 -> android-4.4_r0.8
* [new tag]        android-4.4_r0.9 -> android-4.4_r0.9
* [new tag]        android-4.4_r1 -> android-4.4_r1
* [new tag]        android-4.4_r1.1 -> android-4.4_r1.1
* [new tag]        android-4.4_r1.2 -> android-4.4_r1.2
* [new tag]        android-cts-4.1_r1 -> android-cts-4.1_r1
* [new tag]        android-cts-4.1_r2 -> android-cts-4.1_r2
* [new tag]        android-cts-4.1_r4 -> android-cts-4.1_r4
* [new tag]        android-cts-4.2_r1 -> android-cts-4.2_r1
* [new tag]        android-cts-4.2_r2 -> android-cts-4.2_r2
* [new tag]        android-cts-4.4_r1 -> android-cts-4.4_r1
* [new tag]        android-sdk-4.4.2_r1 -> android-sdk-4.4.2_r1
* [new tag]        android-sdk-adt_r20 -> android-sdk-adt_r20
* [new tag]        android-sdk-support_r11 -> android-sdk-support_r11
* [new tag]        android-sdk-support_r11 -> android-sdk-support_r11

Fetching projects:  0% (1/420) Fetching project platform/external/wpa_supplicant_8
remote: Counting objects: 7254, done.
remote: Compressing objects: 100% (2645/2645), done.
Receiving objects: 31% (2272/7254), 332.00 KiB | 654 KiB/s
```

After this step the repository is synced 100% and the source code is available in a directory named android in the current directory.

IMPORTANT NOTE:

1. If the android source code was download in a single go without any interruption the script "linaro_android_build_cmds.sh" would automatically start the build process too. But if the download stops due to some reason following instructions in the following section to manually start the android build.
2. If the download stops due to some reason follow the below instructions
 - a. Change to directory named android in current directory
\$ cd android
 - b. Use the below command to resume syncing the android repository
\$./repo sync

2.3 Building android

To build the android source code provided by Linaro use the below command.

Once repositories are fetched inside a directory named android in the current repository. Use the below commands

```
$ cd android  
$ . build/envsetup.sh  
$ lunch pandaboard-eng  
$ make boottarball systemtarball userdatatarball
```

The above commands will start the android build and the process would continue until the build is complete

Once the build is complete the following files would be generated in the below path

Android/out/target/product/pandaboard/

1. Boot.tar.bz2
2. System.tar.bz2
3. Userdata.tar.bz2

2.4 Flashing Images to SD card

Follow the below instructions in sequence in order to flash the SD card with android image binaries

2.4.1 Disable automount in Ubuntu

To disable automount use the below commands

```
$ TMP1=$(dconf read /org/gnome/desktop/media-handling/automount)  
$ TMP2=$(dconf read /org/gnome/desktop/media-handling/automount-open)  
$ dconf write /org/gnome/desktop/media-handling/automount false  
$ dconf write /org/gnome/desktop/media-handling/automount-open false
```

2.4.2 Install Linaro image tools

In order to flash the SD card with the android binaries generated from the build process, we require to install the following package

- Linaro-image-tools

To install this package use the below commands

```
$ sudo add-apt-repository ppa:linaro-maintainers/tools  
$ sudo apt-get update  
$ sudo apt-get install linaro-image-tools
```

2.4.3 Flash images to SD card

Insert a formatted SD card into the host machine. Once inserted use the below command to get to know the device node associated with SD card. Device node is a representation of SD card on Linux system.

```
$ dmesg
```

Look for a line that looks like the following at the end of the log

```
[288582.790722] sdc: sdc1 sdc2 sdc3 sdc4 < sdc5 sdc6 >
```

The most recent log after inserting the SD card would indicate the correct node name (like sdb, sdc or sdb etc.)

IMPORTANT NOTE:

1. In some system the node name would be something similar to **mmcblkx** where x is the device number
2. Choosing a wrong device may cause loss of data in system. So to be safe it is advised to verify the size of the device using the partition manager present in Ubuntu.
3. If partition manager is not installed use below command to install one (gparted partition manager)
`$ sudo apt-get install gparted`

Run linaro image tools

```
$ linaro-android-media-create --mmc /dev/sdc --dev panda --boot boot.tar.bz2  
--system system.tar.bz2 --userdata userdata.tar.bz2
```

2.4.4 Install graphics libraries

Use the below commands in order to flash the graphic libraries to the SD card

```
$ wget http://people.linaro.org/~vishalbhoj/install-binaries-4.0.4.sh  
$ chmod a+x install-binaries-4.0.4.sh  
$ ./install-binaries-4.0.4.sh
```

2.4.5 Restore automount in Ubuntu

Use the below commands to restore automount in Ubuntu

```
$ dconf write /org/gnome/desktop/media-handling/automount $TMP1
```

```
$ dconf write /org/gnome/desktop/media-handling/automount-open $TMP2
```

Now plug the SD card into pandaboard setup and , boot it to view android screen on HDMI or DVI display.