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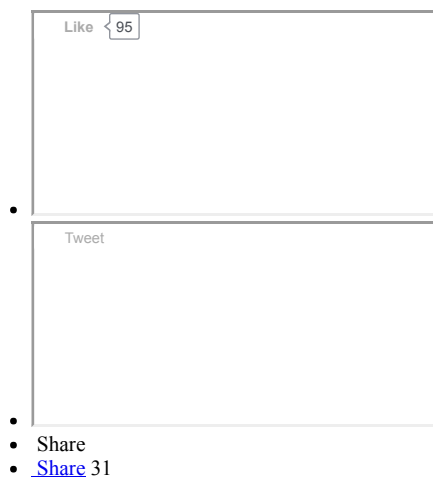
[How to] Connect your Android Ice Cream Sandwich Phone to Ubuntu for File Access

By [Bilal Akhtar](#) under [How To December 11, 2011](#)

Notice: This post is more than a year old. It may be outdated.

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The Galaxy Nexus – such a great phone, and one that wows anyone who uses it.

But there is one area in which the phone falls short: getting it hooked up to my Ubuntu laptop.

A simpler version of this guide [can be found here](#).

This is because Google has moved away from the *USB mass storage protocol*, which was used up till Android 2.3, to the [MTP \(Media Transfer Protocol\)](#). As such, any phone or tablet with Android 3.0 and above will use the MTP protocol – something which doesn't work too well with Ubuntu out of the box.

Thankfully it took me just two minutes of Googling to find out the solution for getting my Galaxy Nexus up and running with Ubuntu.

Why abandon USB Mass Storage?

As [explained by Google Engineer Dan Morrill](#), the USB mass storage protocol was a block-level protocol. What this meant was that a partition could not be mounted on two different systems at the same time. Each partition that needs to be mounted on a computer must be unmounted from the phone first. This would be impossible on a phone with only a single partition, since if the system partition was unmounted, the phone would crash.

To work around this issue, Android phones up until now either had two partitions in the internal memory (like the Nexus S) or had a microSD slot (like the Samsung Galaxy S II). Phones with micro-SD slots would just export the microSD card partitions to the connected computer.

But the Galaxy Nexus only has a single internal partition. Other *Ice Cream Sandwich* phones in the future are likely to follow suit.

According to Google Engineer Dan Morrill, the advantages of the single partition approach are that *“no more staring sadly at your 5GB free on Nexus S when your internal app data partition has filled up — it's all one big happy volume.”*

So Google has made the move on to MTP, to enable phones with single large partitions to connect to a computer with nearly the same results as USB mass storage. I'd personally prefer a phone with MTP rather than a phone with two tiny partitions.

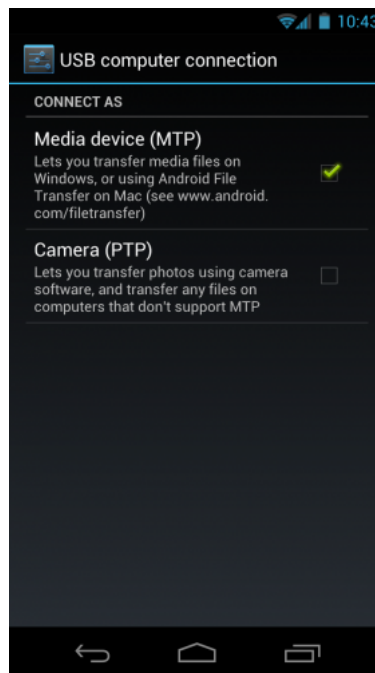
Connecting your Ice Cream Sandwich phone or tablet to Ubuntu for file access

Before you begin, try plugging your phone in and see if it works straight away. At the time of writing, the only official Android Ice Cream Sandwich phone is the Galaxy Nexus, and mine doesn't work. But future ICS phones might work, depending on whether they have an SD card slot or not, and whether they support exporting the card as USB mass storage. If it works, you should be good to go.

First up, install the necessary tools:

```
sudo apt-get install mtp-tools mtpfs
```

Now, connect your Galaxy Nexus to your computer. On your phone, open up the notification drawer, and click on “USB Connection type”. Make sure that MTP is selected.



Then, run these commands:

```
mtp-detect | grep idVendor
```

```
mtp-detect | grep idProduct
```

You shall get an output like this:

```
bilal@bilal-dell:~$ mtp-detect | grep idVendor
Device 0 (VID=04e8 and PID=685c) is UNKNOWN.
Please report this VID/PID and the device model to the libmtp development team
    idVendor: 04e8
bilal@bilal-dell:~$ mtp-detect | grep idProduct
Device 0 (VID=04e8 and PID=685c) is UNKNOWN.
Please report this VID/PID and the device model to the libmtp development team
    idProduct: 685c
```

Note down the numbers written in front of idVendor and idProduct, you'll need those later on.

Now, run this commands:

```
gksu gedit /etc/udev/rules.d/51-android.rules
```

A gedit window should open up. Type this text in it, all in a **single line**:

```
SUBSYSTEM=="usb", ATTR{idVendor}=="VENDORID", ATTR{idProduct}=="PRODUCTID", MODE="0666"
```

Replace VENDORID with the idVendor you had noted down earlier. Similarly, replace PRODUCTID with the idProduct you had noted down. In my case, they were 04e8 and 685c respectively, but they might have been different for you.

Also, **remember to re-type the quotes in the line after you've copied and pasted it, otherwise udev may output an error.**

If you're in doubt, you can copy the same line from [this pastebin instead](#) and then replace PRODUCTID and VENDORID as needed.

Save and close the file. Then, **disconnect your phone** and run these commands:

```
sudo service udev restart
```

```
sudo mkdir /media/GalaxyNexus
```

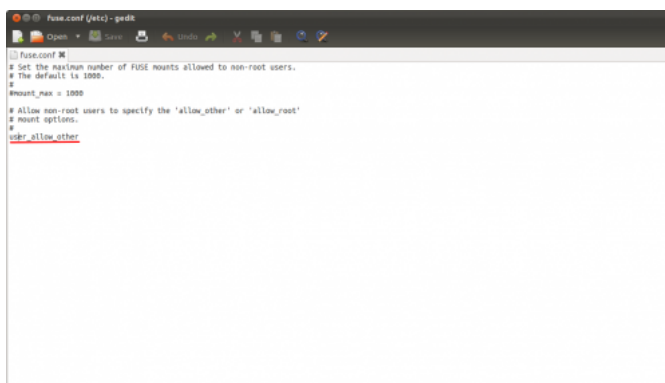
```
sudo chmod a+rw /media/GalaxyNexus
```

```
sudo adduser YOURUSERNAME fuse
```

Replace YOURUSERNAME with your Ubuntu user name. Now, run this command:

```
gksu gedit /etc/fuse.conf
```

In the Gedit window, remove the # at the beginning of the last line (the one that begins with "#user_allow_other") like this:



You're almost done! Now, restart your computer, and then run these three commands :

```

echo "alias android-connect='mtpfs -o allow_other /media/GalaxyNexus'" >> ~/.bashrc
echo "alias android-disconnect='fusermount -u /media/GalaxyNexus'" >> ~/.bashrc
source ~/.bashrc

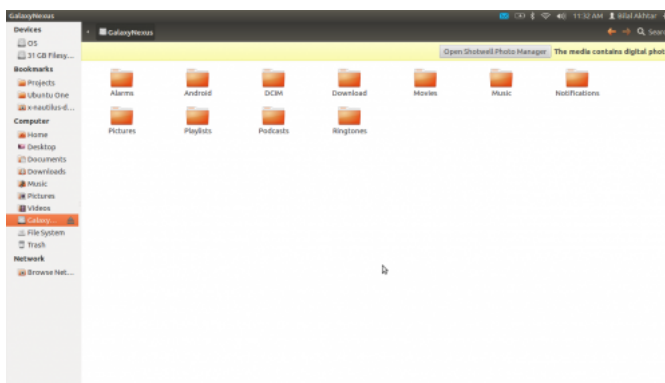
```

Again, do re-type the quotes in each command after you've copied, otherwise the command won't work.

Connect your phone again, and then make sure your phone is using MTP, then run this command:

```
android-connect
```

Voila! You can now browse your Android phone contents using Nautilus. Just fire up the file manager, and then in the side bar click GalaxyNexus to browse your phone contents just like you would do with a USB stick. You can also add, remove and modify files just like a normal file system.



You might have noticed that you cannot use the Nautilus eject icon to disconnect the phone. Instead, to safely remove the phone, just run the command:

```
android-disconnect
```

From now onward, you just need to run android-connect to mount your phone and then android-disconnect to safely remove your phone. Everything else should be handled automatically. I tried many ways of getting the mount and unmount to happen automatically on cable connect, but this was the best solution I could come up with.

These two commands won't require root permissions to run. All users who are members of the fuse user group should be able to run these commands without root access.

That's it!

You've successfully connected your Ice Cream Sandwich phone to your Ubuntu computer. The process may be long for a newbie, but I'm sure someone will come around and make a GUI for all of this so that everything happens smoothly :)

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Kleverson Royther · 4 years ago

What a pain! I hope the developers can make it automatic and more compatible with Galaxy Nexus leading the MTP advent...

54 ^ | v · Reply · Share



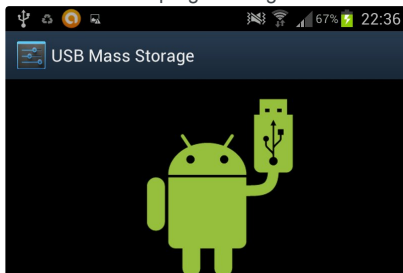
Ned Gij → Kleverson Royther · 4 years ago

No its not.. Very Easy.. ill explain....
In your PHONE (with IceCreamSandwich running ofcourse)

**go to Settings->More->USB utilities. Tap on.. "connect storage to pc". A screen pops up saying.. "connect usb cable to use mass storage"...

Then! and only then! insert your USB cable into the PC. Then a screen show saying "USB connected".. Tap on USB storage. Another screen pops-up just tap OK and your Done!***

GOOD JOB.. No programming in terminal no files you need to change.



see more

8 ^ | v · Reply · Share



LastDanmer → Ned Gij · 4 years ago

Where are you found "More" in Settings?
Phone (on screenshot) with TouchWiz, maybe because of it you have this option (More->USB utilities)

3 ^ | v · Reply · Share



lucidium → LastDanmer · 4 years ago

its in the wireless and networks menuwifi, bluetooth, more..

2 ^ | v · Reply · Share



frodo wiz → Ned Gij · 3 years ago

many providers have set this up as a seperate service- for pay. just bought a samsung gal 3 and usb tethering, usb connection is available for 5 bucks a month more. i recently found a solution for ubuntu at webupd8 using googles go language. quite fast transfer speeds compared to this. thanks to websites like this and hard working devs the answer is always just around the corner.. kudos

1 ^ | v · Reply · Share



easoncxz → Ned Gij · 4 years ago

no such case for GALAXY NEXUS.

^ | v · Reply · Share



Miguel Alejandro Callejas Past → Ned Gij · 4 years ago



:O !!

It works!!

:D Thanks

[^](#) [v](#) [Reply](#) [Share](#)**Kleverson Royther** → Ned Gly · 4 years ago

I don't have the phone, but you really saved a lot of lives right now. I don't know if Google made Nexus 7 run under MTP, if they did, it is quite an easy task now.

2012/7/17 Disqus <notifications@disqus.net>

[^](#) [v](#) [Reply](#) [Share](#)**Mark Dwyer** → Kleverson Royther · 4 years ago

I have the the Epic 4g Touch (SGII) with the recent ICS update. It does not have USB Utilities as a option under Settings>More.

The omgubuntu method does not seem to work either. When I plug it in, I get "Unable to Mount Device as a Camera" I have MTP selected as the connection method on the phone. I get 2 SAMSUNG_Android Icons on my desktop. The list locations as
gphoto2://[usb:002,022]/store_00010001
gphoto2://[usb:002,022]/store_00020002

Both show a top level of folders but cannot be searched beyond this. If I unmount these icons, and then run android-connect I get a volume, but with the error:

Error: Error when getting information for file '/media/GSII': Transport endpoint is not connected.

[5](#) [^](#) [v](#) [Reply](#) [Share](#)**Robert A. Mcelvenny** → Mark Dwyer · 4 years ago

GALAXY NEXUS IS A MTP ONLY DEVICE YOU FOOLLLLLLLLLLLLLLLLLLLLLLISH CHILDREN!!!!!!!

[5](#) [^](#) [v](#) [Reply](#) [Share](#)**jalexoid** → Kleverson Royther · 4 years ago

I use gMTP. Though the stupid program tries to create Albums for me, where I don't want that.

[^](#) [v](#) [Reply](#) [Share](#)**Bilal Akhtar** → jalexoid · 4 years ago

gMTP fails badly for me, and reportedly hasn't worked very well with Honeycomb tablets in the past as well (though some tablet users did report success with it). So I didn't mention it. If it did work, it would have been the most straightforward way, though.

[^](#) [v](#) [Reply](#) [Share](#)**Swapnil Bhartiya** → Bilal Akhtar · 4 years ago

Thanks Bilal but it doesn't work. The latest update of Samsung has broken things further.

[^](#) [v](#) [Reply](#) [Share](#)**fiws** · 4 years ago

Or try to manage your phone with Airdroid.

[24](#) [^](#) [v](#) [Reply](#) [Share](#)**Peterson Silva** → fiws · 4 years ago

Oh yeah I forgot about that. Airdroid is fantastic! =D

[5](#) [^](#) [v](#) [Reply](#) [Share](#)**Dan Dunay** → fiws · 3 years ago

Airdroid is good, but I prefer "Wifi File Transfer". Any ftp client (mc, Nautilus) can just get about the chore of moving files.

[1](#) [^](#) [v](#) [Reply](#) [Share](#)**StoyanDeckoff** → fiws · 4 years ago

thinking exactly this the whole article;)

[1](#) [^](#) [v](#) [Reply](#) [Share](#)**mekmar** → fiws · 4 years ago

Official FAQ of Airdroid states, that there is no support for Android 4.0 yet. But I guess, it's just a matter of days or weeks.

[1](#) [^](#) [v](#) [Reply](#) [Share](#)**Martin Karlsson** → mekmar · 4 years ago

It has experimental support since 1.0.3, I think.

[^](#) [v](#) [Reply](#) [Share](#)**Thalles de Paula** → fiws · 4 years ago

I totally agree with you ! Is even easier .

[^](#) [v](#) [Reply](#) [Share](#)**Andrea Grandi** · 4 years ago

why the hell did you write all the commands in UPPERCASE :(?! So I've to manually rewrite everything...

[14](#) [^](#) [v](#) [Reply](#) [Share](#)

- > — **NA** · 4 years ago
Whoever want's to see this integrated in Ubuntu, may want to vote for it on Launchpad: <http://launchpad.net/bugs/9034...> . For newbies: Please do not write comments "Me too" or "+1". These will not be counted and are just spam. Instead login into Launchpad and choose "Yes, it affects me too" in the upper area of the page by clicking on "This bug affects x people... does it affect you too?".
9 ^ | v · Reply · Share >
- > — **haydoni** · 4 years ago
If this is the way Android has moved, then support for this filesystem should be included by default in Precise! (there's going to be lots of ICS phones out there!)

Also, if you do pull out before disconnecting, are there any consequences? (most of the time ejecting seems like a waste of time...)
8 ^ | v · Reply · Share >
- > — **Bilal Akhtar** → haydoni · 4 years ago
Mtpfs segfaults if I disconnect the cable straight away. To the end-user, this won't be obvious at all; but since I'm running Precise, I get an apport prompt.

So yes, technically you can remove the cable straight away, but I'd suggest the safe way
1 ^ | v · Reply · Share >
- > — **Kleverson Royther** → haydoni · 4 years ago
I don't know about this case, but most devices with USB Mass Storage have their storage prepared to be safely removed anytime (in Windows, there's the Properties window that show if this is a feature or not). Again, I don't know about this case, but I would not risk it...
1 ^ | v · Reply · Share >
- > — **Oliver** → haydoni · 4 years ago
The "remove safely" is to make sure that all data is flushed to the device. There are transfer buffers in memory, which are faster than the drive itself. Copying has "completed" it then flushes the buffers to the device in the background. This is usually really quick (depends on size of buffer), but if you disconnect before this has completed, it will corrupt that file its trying to flush.
^ | v · Reply · Share >
- > — **AJ** → haydoni · 4 years ago
MTP can be more cryptic to be perfectly honest. If your phone says 'sync complete' on the screen, it now leaves a margin for error as that screen will be the output of the still mounted system partition on the device, rather than detecting current transfer. If it gets it wrong, you could corrupt some data if you remove it too early - I would remove safely, learnt the hard way on my old SE W443 series mp4 :/
^ | v · Reply · Share >
- > — **brissou** · 4 years ago
seriously, WHY THE CAPS??
this is a pain, can't copy/paste
7 ^ | v · Reply · Share >
- > — **Bilal Akhtar** → brissou · 3 years ago
It's not in caps for me, which browser are you using?
^ | v · Reply · Share >
- > — **easoncxz** → brissou · 4 years ago
which caps actually? the 'SUBSYSTEM' bunch? i'm asking because the method in the post didn't work for me.
^ | v · Reply · Share >
- > — **Opposum Chips** · 3 years ago
I can't get this to work either (LGP700). The alias commandes didn't work.
Now everytime I open a terminal I get :

"alias: command not found
"alias android-disconnect="fusermount -u /media/LGP700"
"alias: command not found
"alias android-disconnect="fusermount -u /media/LGP700"
"alias: command not found
"alias android-disconnect="fusermount -u /media/LGP700"

how can I fix this ?
6 ^ | v · Reply · Share >
- > — **sarat bhaswanth** → Opposum Chips · 2 years ago
retype the quotations dude..problem solved
^ | v · Reply · Share >
- > — **Ian Santopietro** · 4 years ago
I should point out that if you put the phone on PTP, then you can browse around it just fine, with no additional set up.
9 ^ | v · Reply · Share >
- > — **sceptre0** → Ian Santopietro · 4 years ago
This doesn't work with Ubuntu 12.04. I can only access the DCIM folder where the pictures are stored.
3 ^ | v · Reply · Share >



Brian Maissy → sceptre0 · 4 years ago
even that doesn't work properly for me
^ | v · Reply · Share ›



housry23 → Ian Santopietro · 4 years ago
This is the way to go. No workarounds needed. Just plug it in, select PTP and when your choices pop up choose "open folder" and you can browse the sdcard with no problems. Thanks Ian Santopietro! Verizon Galaxy Nexus.
1 ^ | v · Reply · Share ›



Alvin B. → housry23 · 4 years ago
Nope. Only opens the photos folder. Ubuntu folks SERIOUSLY need to fix this. Can't believe it's been so long, and they haven't even bothered.
^ | v · Reply · Share ›



Parker Reed · 4 years ago
You do realize that the linux filesystem is case sensitive and thus all your commands have to be typed out by hand?
4 ^ | v · Reply · Share ›



Kenny Chowdhary · 4 years ago
I tried this on Maverick Meerkat Ubuntu 10.10 and it did not work :(
When I connect choosing MTP on the Nexus and type

mtp-detect | grep idVendor

I get nothing. No ID number or anything.
3 ^ | v · Reply · Share ›



notatoad · 4 years ago
Why abandon USB Mass Storage? simple: because android didn't want to be restricted to using FAT32 as their filesystem anymore. the preferred filesystem is now EXT, which works on linux but which can't be read by windows or mac. in order to enable support for the majority of users, they had to introduce a translation layer.
5 ^ | v · Reply · Share ›



Cody Nybo → notatoad · 4 years ago
I can read/write ext2/3 just fine with ext2fsd on winblows
^ | v · Reply · Share ›



jalexoid → notatoad · 4 years ago
Mac does not support EXT2/3? I'm pretty sure it does.
^ | v · Reply · Share ›



Rachel Eliason · 3 years ago
I got all the way through and now it says "mtpfs-o: command not found". Is mtpfs-"o" or "zero"? Is there something else I am missing?
2 ^ | v · Reply · Share ›



Anoop Vargheese → Rachel Eliason · 2 years ago
There should be a space between the "mtpfs" and the "-o". And yes, it's the alphabet o, not the number.
^ | v · Reply · Share ›



ActionParsnip · 4 years ago
Could just use bluetooth, or am I thinking too much outside the box?
2 ^ | v · Reply · Share ›



Bilal Akhtar → ActionParsnip · 4 years ago
1) Bluetooth is SLOW.

2) Bluetooth is crappy.

3) Bluetooth support in Ubuntu sucks.
1 ^ | v · Reply · Share ›



madjr → Bilal Akhtar · 4 years ago
u should file a bug :)
7 ^ | v · Reply · Share ›



Guest → madjr · 4 years ago
and then?
^ | v · Reply · Share ›



madjr → Guest · 4 years ago
hopefully your problems improve :)
2 ^ | v · Reply · Share ›



Guest madjr · 4 years ago

It would be better that the problems disappear! =P

3 ^ | v · Reply · Share >

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I wrote a shell script to install all the needed software.

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