



Applied Parallel Computing LLC

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How to break Ubuntu 13.04/14.04 with vanilla CUDA driver and unbreak it back

Dmitry Mikushin

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After installing CUDA driver from NVIDIA website, Ubuntu 13.04/14.04 window manager decorations (Unity, via Compiz) may stop working properly on Optimus machines (primary low-end Intel GPU + secondary high-end NVIDIA GPU).

This tutorial explains how to bring back window manager decorations.

- We want to install CUDA driver to enable the use of NVIDIA GPU in compute applications
- We want to have the newest CUDA development driver from NVIDIA website
- We do NOT want to do desktop acceleration with NVIDIA GPU – desktop shall still be managed by Intel GPU
- If you want to do NVIDIA desktop acceleration, this tutorial is NOT for you. Look into bumblebee instead.

Breaking: install vanilla CUDA driver

Firefox Web Browser

CUDA Downloads | NVIDIA Developer Zone - Mozilla Firefox

https://developer.nvidia.com/cuda-downloads?sid=524923

Mozilla Firefox is free and open source software from the non-profit Mozilla Foundation. [Know your rights...](#)

NVIDIA CUDA ZONE Getting Started Downloads Training Ecosystem [Register Now](#) Login

Home > [CUDA ZONE](#) > [Tools & Ecosystem](#) > [CUDA Toolkit](#) > [CUDA Downloads](#)

CUDA Downloads

CUDA 6 Production Release

[Windows](#) **Linux** [Mac OSX](#)

Distribution	x86 64-bit	x86 32-bit	ARMv7
Fedora 19	RPM RUN		
OpenSUSE 12.3	RPM RUN		
RHEL 6 CentOS 6	RPM RUN		
RHEL 5 CentOS 5		RUN	
SLES 11 (SP2 & SP3)	RPM RUN		
Ubuntu 13.04	DEB RUN	RUN	DEB

Documentation

- [Release Notes](#)
- [End User License Agreement](#)
- [Online Documentation](#)
- [Download Checksums](#)
- [CUDA 6 Overview & Performance Reports](#)

Links

- [CUDA Toolkit Overview](#)

Breaking: install vanilla CUDA driver

1 Switch to console-mode tty: Ctrl+Alt+F2

2 Disable Nouveau:

```
$ cd Downloads
$ sudo service lightdm stop
$ chmod +x cuda_6.0.37_linux_64.run
$ sudo ./cuda_6.0.37_linux_64.run
$ sudo reboot
```

3 Install driver, CUDA toolkit and samples:

```
$ cd Downloads
$ sudo service lightdm stop
$ sudo ./cuda_6.0.37_linux_64.run
$ sudo reboot
```

No Unity anymore after reboot

File Edit View Search Terminal Help

```
Do you want to continue [Y/n]? y
Get:1 http://us.archive.ubuntu.com/ubuntu/ raring/universe mc-data all 3:4.8.3-1
0 [1,048 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu/ raring/universe mc amd64 3:4.8.3-10 [
430 kB]
Fetched 1,477 kB in 2s (720 kB/s)
Selecting previously unselected package mc-data.
(Reading database ... 155233 files and directories currently installed.)
Unpacking mc-data (from .../mc-data_3%3a4.8.3-10_all.deb) ...
Selecting previously unselected package mc.
Unpacking mc (from .../mc_3%3a4.8.3-10_amd64.deb) ...
Processing triggers for man-db ...
Processing triggers for hicolor-icon-theme ...
Processing triggers for doc-base ...
Processing 32 changed doc-base files, 1 added doc-base file...
Processing triggers for bamfdaemon ...
Rebuilding /usr/share/applications/bamf-2.index...
Processing triggers for desktop-file-utils ...
Processing triggers for gnome-menus ...
Setting up mc-data (3:4.8.3-10) ...
Setting up mc (3:4.8.3-10) ...
update-alternatives: using /usr/bin/mcview to provide /usr/bin/view (view) in au
to mode
marcusmae@M17xR4:~$ sudo mc
```

No Unity anymore after reboot

```
File Edit View Search Terminal Help
Do you want to continue [Y/n]? y
Get:1 http://us.archive.ubuntu.com/ubuntu/ raring/universe mc-data all 3:4.8.3-1
0 [1,048 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu/ raring/universe mc amd64 3:4.8.3-10 [
430 kB]
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Processing triggers for desktop-file-utils ...
Processing triggers for gnome-menus ...
Setting up mc-data (3:4.8.3-10) ...
Setting up mc (3:4.8.3-10) ...
update-alternatives: using /usr/bin/mcview to provide /usr/bin/view (view) in au
to mode
marcusmae@M17xR4:~$ sudo mc
```

- After logging in you will get empty wallpaper

No Unity anymore after reboot

```
File Edit View Search Terminal Help
Do you want to continue [Y/n]? y
Get:1 http://us.archive.ubuntu.com/ubuntu/ raring/universe mc-data all 3:4.8.3-1
0 [1,048 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu/ raring/universe mc amd64 3:4.8.3-10 [
430 kB]
Fetched 1,477 kB in 2s (720 kB/s)
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Processing triggers for man-db ...
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Processing triggers for gnome-menus ...
Setting up mc-data (3:4.8.3-10) ...
Setting up mc (3:4.8.3-10) ...
update-alternatives: using /usr/bin/mcview to provide /usr/bin/view (view) in au
to mode
marcusmae@M17xR4:~$ sudo mc
```

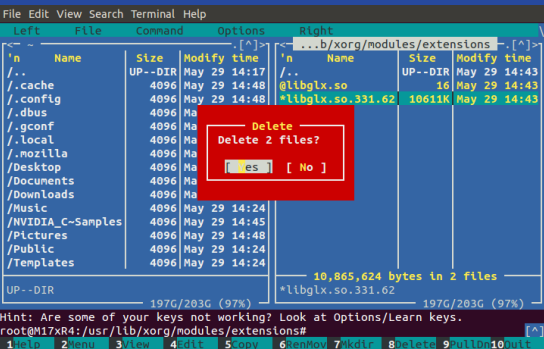
- After logging in you will get empty wallpaper
- Press Ctrl+Alt+T to open terminal

No Unity anymore after reboot

```
File Edit View Search Terminal Help
Do you want to continue [Y/n]? y
Get:1 http://us.archive.ubuntu.com/ubuntu/ raring/universe mc-data all 3:4.8.3-1
0 [1,048 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu/ raring/universe mc amd64 3:4.8.3-10 [
430 kB]
Fetched 1,477 kB in 2s (720 kB/s)
Selecting previously unselected package mc-data.
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Unpacking mc-data (from .../mc-data_3%3a4.8.3-10_all.deb) ...
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Unpacking mc (from .../mc_3%3a4.8.3-10_amd64.deb) ...
Processing triggers for man-db ...
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Setting up mc-data (3:4.8.3-10) ...
Setting up mc (3:4.8.3-10) ...
update-alternatives: using /usr/bin/mcview to provide /usr/bin/view (view) in au
to mode
marcusmae@M17xR4:~$ sudo mc
```

- After logging in you will get empty wallpaper
- Press Ctrl+Alt+T to open terminal
- Install mc: `$ sudo apt-get install mc`
- Execute mc under admin: `$ sudo mc`

No Unity anymore after reboot



```
File Edit View Search Terminal Help
Left      File      Command      Options      Right
'~'      Name      Size      Modify time  'n      Name      Size      Modify time
'~'      Name      Size      Modify time  'n      Name      Size      Modify time
UP--DIR  May 29 14:17  UP--DIR  May 29 14:43
./..     May 29 14:48  @libglx.so      16      May 29 14:43
./cache  4096      May 29 14:48  *libglx.so.331.62  10611K  May 29 14:43
./config 4096      May 29 14:48
./dbus   4096      Ma
./gconf  4096      Ma
./local  4096      Ma
./mozilla 4096     Ma
./Desktop 4096     Ma
./Documents 4096    Ma
./Downloads 4096   Ma
./Music   4096      May 29 14:24
./NVIDIA_C-Samples 4096 May 29 14:45
./Pictures 4096     May 29 14:48
./Public  4096      May 29 14:24
./Templates 4096     May 29 14:24

UP--DIR 197G/203G (97%)

10,865,624 bytes in 2 files
*libglx.so.331.62
UP--DIR 197G/203G (97%)

Delete
Delete 2 files?
[ Yes ] [ No ]

Hint: Are some of your keys not working? Look at Options/Learn keys.
root@M17XR4: /usr/lib/xorg/modules/extensions#
1Help 2Menu 3View 4Edit 5Copy 6RenMov 7Mkdir 8Delete 9PullOn 10Quit
```

- After logging in you will get empty wallpaper
- Press Ctrl+Alt+T to open terminal
- Install mc: `$ sudo apt-get install mc`
- Execute mc under admin: `$ sudo mc`
- Delete files in `/usr/lib/xorg/modules/extensions`

No Unity anymore after reboot

```
File Edit View Search Terminal Help
Left      File      Command  Options  Right
Left pane:
'~' Name      Size      Modify time
UP--DIR
./..
./.cache      4096      May 29 14:48
./config      4096      May 29 14:48
./dbus        4096      May 29 14:24
./gconf       4096      May 29 14:47
./local       4096      May 29 14:24
./mozilla     4096      May 29 14:24
./Desktop     4096      May 29 14:24
./Documents   4096      May 29 14:40
./Downloads   4096      May 29 14:30
./Music       4096      May 29 14:24
./NVIDIA_C-Samples 4096      May 29 14:45
./Pictures    4096      May 29 14:49
./Public      4096      May 29 14:24
./Templates   4096      May 29 14:24
UP--DIR
197G/203G (97%)

Right pane:
'~' Name      Size      Modify time
/usr/lib
/xul-ext      4096      Apr 24 2013
/zeitgeist    4096      Apr 24 2013
*command--t-found 3191      Mar 1 2013
libGL.la      654       May 29 14:43
@libGL.so     10        May 29 14:43
@libGL.so.1   15        May 29 14:43
*libGL.so.331.62 1163112    May 29 14:43
@libI810XvMC.so.1 20        May 29 14:16
libI810X-o.1.0.0 47496      Apr 19 2013
@libIntel-MC.so.1 21        May 29 14:16
libIntel-o.1.0.0 409856     Apr 19 2013
@libOpenCL.so 14        May 29 14:43
@libOpenCL.so.1 16        May 29 14:43
@libOpenCL.so.1.0 18        May 29 14:43
*libOpenC-o.1.0.0 21296      May 29 14:43
1,163,791 bytes in 4 files
*libGL.so.331.62
197G/203G (97%)

Hint: M-I will allow you to execute programs and see the output in the viewer.
root@M17XR4:/usr/lib#
```

- After logging in you will get empty wallpaper
- Press Ctrl+Alt+T to open terminal
- Install mc: `$ sudo apt-get install mc`
- Execute mc under admin: `$ sudo mc`
- Delete files in `/usr/lib/xorg/modules/extensions`
- Delete libGL* files in `/usr/lib`

```

File Edit View Search Terminal Help
Left      File      Command  Options  Right
-----
'n      Name      Size      Modify time
/..      UP--DIR      May 29 14:17
/.cache      4096      May 29 14:48
/.config      4096      May 29 14:48
/.dbus      4096      May 29 14:24
/.gconf      4096      May 29 14:47
/.local      4096      May 29 14:24
/.mozilla      4096      May 29 14:24
/Desktop      4096      May 29 14:24
/Documents      4096      May 29 14:40
/Downloads      4096      May 29 14:30
/Music      4096      May 29 14:24
/NVIDIA_C-Samples      4096      May 29 14:45
/Pictures      4096      May 29 14:50
/Public      4096      May 29 14:24
/Templates      4096      May 29 14:24

UP--DIR
197G/203G (97%)

Hint: We also have a nice manual page.
root@M17XR4:/usr/lib32#
1Help 2Menu 3View 4Edit 5Covp 6RenMov 7Mkdir 8Delete 9FullDn 10Quit

```

- ```
Hint: We also have a nice manual page.
root@M17xR4:/usr/lib32#
```

# No Unity anymore after reboot

File Edit View Search Terminal Help

```
nvidia-310-updates: /usr/lib32/nvidia-310-updates/libGL.so
nvidia-310-updates: /usr/lib32/nvidia-310-updates/libGL.so.1
nvidia-310-updates: /usr/lib32/nvidia-310-updates/libGL.so.310.44
nvidia-313-updates: /usr/lib/nvidia-313-updates/libGL.so
nvidia-313-updates: /usr/lib/nvidia-313-updates/libGL.so.1
nvidia-313-updates: /usr/lib/nvidia-313-updates/libGL.so.313.30
nvidia-313-updates: /usr/lib32/nvidia-313-updates/libGL.so
nvidia-313-updates: /usr/lib32/nvidia-313-updates/libGL.so.1
nvidia-313-updates: /usr/lib32/nvidia-313-updates/libGL.so.313.30
marcusmae@M17xR4:~$ sudo apt-get install libgl1-mesa-glx
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
 libegl1-mesa libegl1-mesa-drivers libgl1-mesa-dri libglapi-mesa
Suggested packages:
 libglide3
The following packages will be upgraded:
 libegl1-mesa libegl1-mesa-drivers libgl1-mesa-dri libgl1-mesa-glx
 libglapi-mesa
5 upgraded, 0 newly installed, 0 to remove and 319 not upgraded.
Need to get 4,740 kB of archives.
After this operation, 240 kB disk space will be freed.
Do you want to continue [Y/n]? █
```

■ `$ sudo apt-get install --reinstall libgl1-mesa-glx`

# No Unity anymore after reboot

File Edit View Search Terminal Help

```
marcusmae@M17xR4:~$ apt-file search libglx.so
fglrx: /usr/lib/fglrx/xorg/modules/extensions/libglx.so
fglrx-updates: /usr/lib/fglrx/xorg/modules/extensions/libglx.so
nvidia-173: /usr/lib/nvidia-173/xorg/libglx.so
nvidia-173: /usr/lib/nvidia-173/xorg/libglx.so.173.14.37
nvidia-304: /usr/lib/nvidia-304/xorg/libglx.so
nvidia-304: /usr/lib/nvidia-304/xorg/libglx.so.304.88
nvidia-304-updates: /usr/lib/nvidia-304-updates/xorg/libglx.so
nvidia-304-updates: /usr/lib/nvidia-304-updates/xorg/libglx.so.304.88
nvidia-310: /usr/lib/nvidia-310/xorg/libglx.so
nvidia-310: /usr/lib/nvidia-310/xorg/libglx.so.310.44
nvidia-310-updates: /usr/lib/nvidia-310-updates/xorg/libglx.so
nvidia-310-updates: /usr/lib/nvidia-310-updates/xorg/libglx.so.310.44
nvidia-313-updates: /usr/lib/nvidia-313-updates/xorg/libglx.so
nvidia-313-updates: /usr/lib/nvidia-313-updates/xorg/libglx.so.313.30
xserver-xorg-core: /usr/lib/xorg/modules/extensions/libglx.so
xserver-xorg-core-dbg: /usr/lib/debug/usr/lib/xorg/modules/extensions/libglx.so
marcusmae@M17xR4:~$ sudo apt-get install --reinstall xserver-xorg-core
[sudo] password for marcusmae: █
```

- \$ sudo apt-get install --reinstall libgl1-mesa-glx
- \$ sudo apt-get install --reinstall xserver-orig-core

# No Unity anymore after reboot

File Edit View Search Terminal Help

```
marcusmae@M17xR4:~$ sudo apt-get install --reinstall xorg
```

- `$ sudo apt-get install --reinstall libgl1-mesa-glx`
- `$ sudo apt-get install --reinstall xserver-org-core`
- `$ sudo apt-get install --reinstall xorg`

# No Unity anymore after reboot

File Edit View Search Terminal Help

```
marcusmae@M17xR4:~$
marcusmae@M17xR4:~$ dconf reset -f /org/compiz/
marcusmae@M17xR4:~$ compiz --replace
```

- \$ sudo apt-get install --reinstall libgl1-mesa-glx
- \$ sudo apt-get install --reinstall xserver-org-core
- \$ sudo apt-get install --reinstall xorg
- \$ dconf reset -f /org/compiz/
- \$ compiz --replace

# Unity is back!

Terminal

3:01 PM

```
marcusmae@M17xR4: ~
1
WARN 2014-05-29 15:01:08 unity <unknown>:0 Failed to fetch boolean: No such interface 'org.ayatana.bamf.view' on object at path /org/ayatana/bamf/window3355454
1
WARN 2014-05-29 15:01:08 unity.glib.dbus.proxy GLibDBusProxy.cpp:418 Calling method "CanHibernate" on object path: "/org/freedesktop/login1" failed: GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.freedesktop.login1 was not provided by any .service files
ERROR 2014-05-29 15:01:08 unity.session.gnome GnomeSessionManager.cpp:334 logind CanHibernate call failed: GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.freedesktop.login1 was not provided by any .service files
WARN 2014-05-29 15:01:08 unity.glib.dbus.proxy GLibDBusProxy.cpp:418 Calling method "CanSuspend" on object path: "/org/freedesktop/login1" failed: GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.freedesktop.login1 was not provided by any .service files
ERROR 2014-05-29 15:01:08 unity.session.gnome GnomeSessionManager.cpp:334 logind CanSuspend call failed: GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.freedesktop.login1 was not provided by any .service files
WARN 2014-05-29 15:01:08 unity <unknown>:0 Failed to fetch type: No such interface 'org.ayatana.bamf.window' on object at path /org/ayatana/bamf/window3355454
WARN 2014-05-29 15:01:08 unity <unknown>:0 Failed to fetch boolean: No such interface 'org.ayatana.bamf.view' on object at path /org/ayatana/bamf/window3355454
1
```

# How to avoid this problem in future

- Install graphics driver separately w/o OpenGL (**--no-opengl-files**):

```
Ctrl+Alt+F2
$ cd Downloads
$./cuda_6.0.37_linux_64.run --extract=$HOME/Downloads/cuda
$ cd cuda
$ sudo service lightdm stop
$ sudo ./NVIDIA-Linux-x86_64-331.62.run --no-opengl-files
```

- Then install CUDA and CUDA samples:

```
$ cd ..
$ sudo ./cuda_6.0.37_linux_64.run
Do you accept the previously read EULA? (accept/decline/quit): accept
Install NVIDIA Accelerated Graphics Driver for Linux-x86_64 331.62? ((y)es/(n)o/(q)uit): n
Install the CUDA 6.0 Toolkit? ((y)es/(n)o/(q)uit): y
Enter Toolkit Location [default is /usr/local/cuda-6.0]: /opt/cuda
Do you want to install a symbolic link at /usr/local/cuda? ((y)es/(n)o/(q)uit): y
Install the CUDA 6.0 Samples? ((y)es/(n)o/(q)uit): y
$ sudo reboot
```