Ubuntu14.04安装NVIDA驱动和CUDA8

- 注：如果只是安装驱动的话，可以执行第1、2步骤，但是装CUDA的话，建议不执行第1、2步，直接在装CUDA的时候，第一步选择是否安装NVIDIA Driver的时候，选择y安装。

1. 安装NVIDIA驱动

   1.1 下载驱动：http://www.geforce.cn/drivers
   1.2 执行命令：sudo service lightdm stop //必须有，不然会安装失败
   1.3 安装nvidia driver
   sudo chmod 755 NVIDIA-Linux-x86_64-367.27.run //获取权限
   sudo ./NVIDIA-Linux-x86_64-367.27.run //安装驱动
   Accept
   Continue installation
   1.4安装完成之后
   sudo service lightdm start

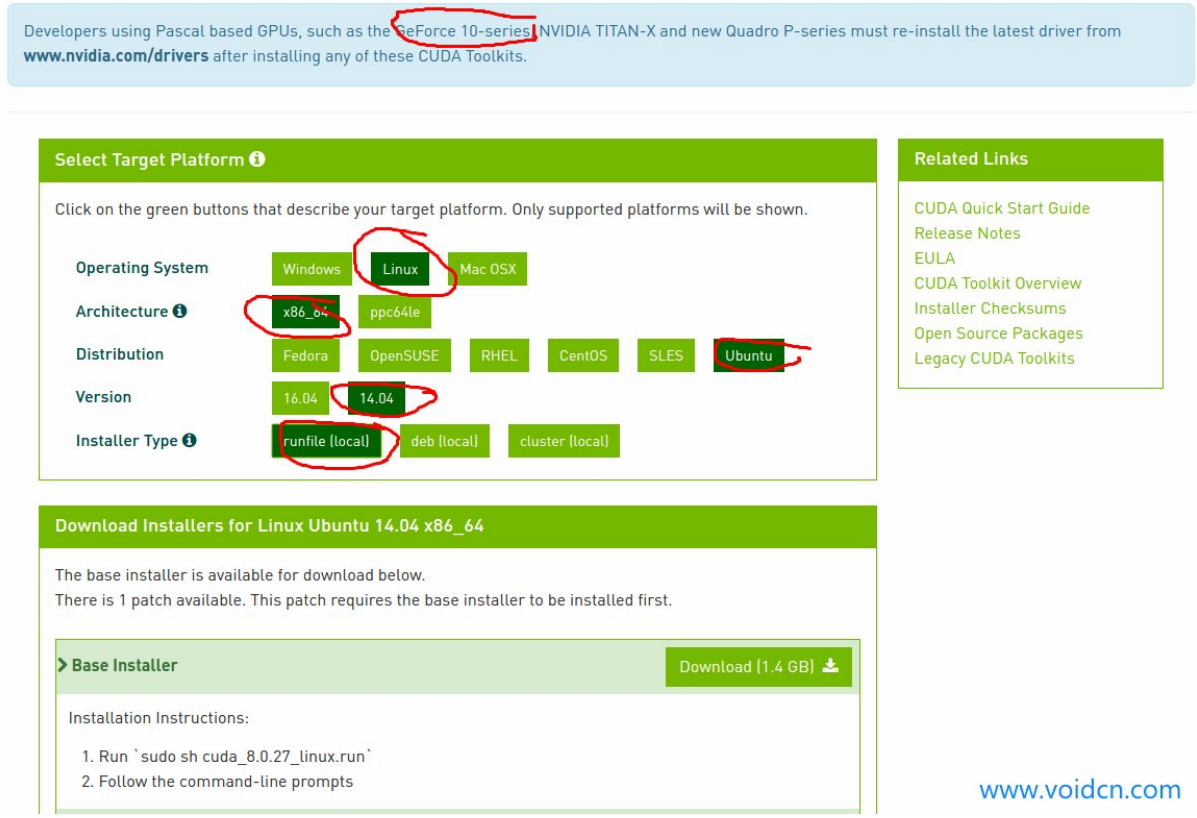
2. 驱动完成后，可能出现循环登陆界面，无法进入系统的情况，解决方案：

```
sudo add-apt-repository ppa:bumblebee/stable
sudo apt-get update
sudo apt-get install bumblebee bumblebee-nvidia
sudo reboot
```

3. cuda8下载

cuda8下载地址: 为 https://developer.nvidia.com/cuda-release-candidate-download

下载页面如图所示，选择linux对应版本，可以选择.run文件，也可以选择.deb文件，这个不影响



4. cuda8安装

下载完成之后，入下载文件目录，执行
sudo cuda_8.0.27_linux.run **注意这里的版本号可能与你下载的有差别**
然后就是各种下一步了，第一步让选择是否安装英伟达图形驱动，如果已经安装了就选择no，我是单独安装的。我也试过在新系统下让他在这一步安装图形驱动，可是有错误，我也不知道为啥，若有人知道，望告知。这一步选择不安装显卡驱动，是没问题的。
cuda安装过程中会让你选择是否创建/usr/local/cuda-8.0到/usr/local/cuda的符号链接，这一步最好选择是，如果切换版本，很方便。

1) 在终端运行指令 sudo sh cuda_8.0.27_linux.run

选择

```
Do you accept the previously read EULA?

accept/decline/quit: accept

Install NVIDIA Accelerated Graphics Driver for Linux-x86_64 361.62?

(y)es/(n)o/(q)uit: n

Install the CUDA 8.0 Toolkit?
```

```
(y)es/(n)o/(q)uit: y

Enter Toolkit Location

[ default is /usr/local/cuda-8.0 ]:

Do you want to install a symbolic link at /usr/local/cuda?

(y)es/(n)o/(q)uit: y

Install the CUDA 8.0 Samples?

(y)es/(n)o/(q)uit: y

Enter CUDA Samples Location

[ default is /home/zhou ]:

Installing the CUDA Toolkit in /usr/local/cuda-8.0 …

Missing recommended library: libGLU.so

Missing recommended library: libX11.so

Missing recommended library: libXi.so

Missing recommended library: libXmu.so

Installing the CUDA Samples in /home/zhou …

Copying samples to /home/zhou/NVIDIA_CUDA-8.0_Samples now…

Finished copying samples.

===========

= Summary =

===========

Driver: Not Selected

Toolkit: Installed in /usr/local/cuda-8.0

Samples: Installed in /home/zhou, but missing recommended libraries

Please make sure that

- PATH includes /usr/local/cuda-8.0/bin
```

```
- LD_LIBRARY_PATH includes /usr/local/cuda-8.0/lib64, or, add /usr/
local/cuda-8.0/lib64 to /etc/ld.so.conf and run ldconfig as root

To uninstall the CUDA Toolkit, run the uninstall script in /usr/loc
al/cuda-8.0/bin

Please see CUDA_Installation_Guide_Linux.pdf in /usr/local/cuda-8.0
/doc/pdf for detailed information on setting up CUDA.

***WARNING: Incomplete installation! This installation did not inst
all the CUDA Driver. A driver of version at least 361.00 is require
d for CUDA 8.0 functionality to work.

To install the driver using this installer, run the following comma
nd, replacing with the name of this run file:

sudo .run -silent -driver

Logfile is /tmp/cuda_install_2961.log
```

安装完成，但是缺少一些库。

2） 安装所缺少的库

```
sudo apt-get install freeglut3-dev build-essential libx11-dev libxm
u-dev libxi-dev libglu1-mesa libglu1-mesa-dev
```

3） 设置环境变量

在终端输入这两句:

```
export PATH=/usr/local/cuda-8.0/bin:$PATH
export LD_LIBRARY_PATH=/usr/local/cuda-8.0/lib64:$LD_LIBRARY_PATH
```

然后修改文件中环境变量设置

```
sudo vi /etc/profile
```

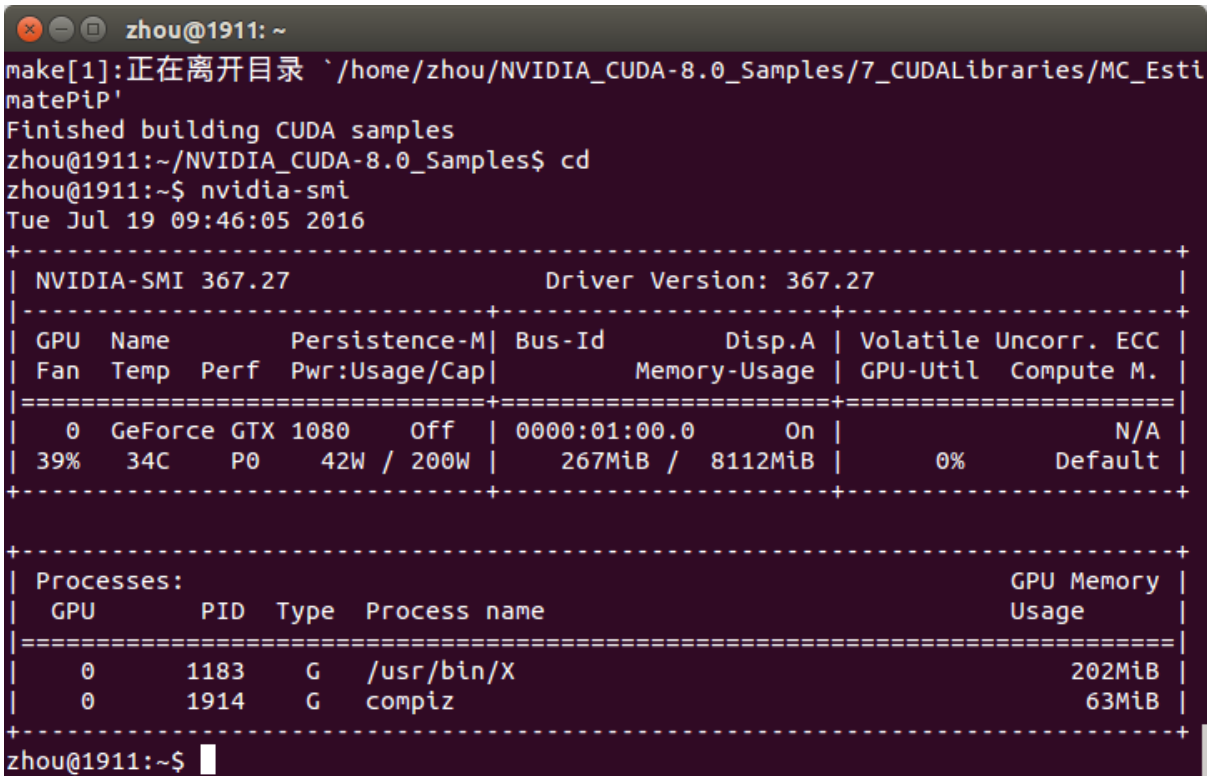
输入上面export的两句，保存，退出。

```
sudo ldconfig //环境变量立即生效
```

4） 验证安装是否完成

```
nvidia-smi
```

显示:



nvcc –V

显示:

```
nvcc -V nvcc: NVIDIA (R) Cuda compiler driver Copyright (
c) 2005-2016

NVIDIA Corporation Built on Wed_May__4_21:01:56_CDT_2016
Cuda

compilation tools, release 8.0, V8.0.26
```

5) 测试cuda的samples

```
cd &amp;lsquo;/home/zhou/NVIDIA_CUDA-8.0_Samples&amp;rsquo;
make
```

- 此时如果出现地2点的问题，请看第2点的修复方法

5. cuDNN下载

在英伟达cudnn界面下载cudnn5.1，这里也需要进行一个调查问卷，就三个选择题。

6. cuDNN安装

具体的cudnn安装如下，其实都不能算是安装，就是把文件拷贝到cuda目录，改变一下权限。

```
tar xvzf cudnn-7.5-linux-x64-v4.tgz
sudo cp cuda/include/cudnn.h /usr/local/cuda/include
sudo cp cuda/lib64/libcudnn* /usr/local/cuda/lib64
sudo chmod a+r /usr/local/cuda/include/cudnn.h /usr/local/cuda/lib64/libcudnn*
```