

## Ubuntu14.04安装NVIDIA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](https://developer.nvidia.com/cuda-release-candidate-download): 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

Developers using Pascal based GPUs, such as the GeForce 10-series, NVIDIA TITAN-X and new Quadro P-series must re-install the latest driver from [www.nvidia.com/drivers](http://www.nvidia.com/drivers) after installing any of these CUDA Toolkits.

### Select Target Platform

Click on the green buttons that describe your target platform. Only supported platforms will be shown.

Operating System	Windows	Linux	Mac OSX			
Architecture	x86_64	ppc64le				
Distribution	Fedora	OpenSUSE	RHEL	CentOS	SLES	Ubuntu
Version	16.04	14.04				
Installer Type	runfile [local]	deb [local]	cluster [local]			

### Related Links

- [CUDA Quick Start Guide](#)
- [Release Notes](#)
- [EULA](#)
- [CUDA Toolkit Overview](#)
- [Installer Checksums](#)
- [Open Source Packages](#)
- [Legacy CUDA Toolkits](#)

### Download Installers for Linux Ubuntu 14.04 x86\_64

The base installer is available for download below.  
There is 1 patch available. This patch requires the base installer to be installed first.

> Base Installer

Download [1.4 GB]

Installation Instructions:

1. Run `sudo sh cuda_8.0.27_linux.run`
2. Follow the command-line prompts

[www.voidcn.com](http://www.voidcn.com)

#### 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/local/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 install all the CUDA Driver. A driver of version at least 361.00 is required for CUDA 8.0 functionality to work.

To install the driver using this installer, run the following command, 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 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：

```
zhou@1911: ~
make[1]:正在离开目录 `/home/zhou/NVIDIA_CUDA-8.0_Samples/7_CUDALibraries/MC_Esti
matePiP'
Finished building CUDA samples
zhou@1911:~/NVIDIA_CUDA-8.0_Samples$ cd
zhou@1911:~$ nvidia-smi
Tue Jul 19 09:46:05 2016

+-----+
| NVIDIA-SMI 367.27                  Driver Version: 367.27                    |
+-----+-----+
| GPU   Name           Persistence-M| Bus-Id        Disp.A | Volatile Uncorr. ECC |
| Fan  Temp  Perf    Pwr:Usage/Cap|      Memory-Usage | GPU-Util  Compute M. |
+-----+-----+
|  0  GeForce GTX 1080    Off      | 0000:01:00.0    On  |         N/A         |
| 39%   34C   P0      42W / 200W | 267MiB / 8112MiB |      0%      Default |
+-----+-----+

+-----+
| Processes:                                     GPU Memory |
|  GPU       PID    Type    Process name                     Usage      |
+-----+-----+
|      0      1183    G       /usr/bin/X                      202MiB      |
|      0      1914    G       compiz                          63MiB      |
+-----+

zhou@1911:~$
```

nvcc &ndash;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 &lsquo;/home/zhou/NVIDIA_CUDA-8.0_Samples&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。

# cuDNN Download

NVIDIA cuDNN is a GPU-accelerated library of primitives for deep neural networks.

☒ I Agree To the Terms of the [cuDNN Software License Agreement](#)

Please check your framework documentation to determine the recommended version of cuDNN.

If you are using cuDNN with a Pascal (GTX 1080, GTX 1070), version 5 or later is required.

Download cuDNN v5.1 (August 10, 2016), for CUDA 8.0 RC

[cuDNN User Guide](#)

[cuDNN Install Guide](#)

[cuDNN v5.1 Library for Linux](#)

[cuDNN v5.1 Library for Power8](#)

[cuDNN v5.1 Library for Windows 7](#)

[cuDNN v5.1 Library for Windows 10](#)

[cuDNN v5.1 Library for OSX](#)

[cuDNN v5.1 Release Notes](#)

[cuDNN v5.1 Runtime Library for Linux \(Deb\)](#)

[cuDNN v5.1 Developer Library for Linux \(Deb\)](#)

[cuDNN v5 Code Samples and User Guide \(Deb\)](#)

Download cuDNN v5.1 (August 10, 2016), for CUDA 7.5

[www.voidcn.com](http://www.voidcn.com)

## 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*
```