

# paddlepaddle (GPU版) 安装过程总结

1. 打开cmd，输入 `nvidia-smi`，最后一栏没装好之前应该是 `unsupport the GPU`，如图红线标出来的就是显卡型号


```
C:\Users\15487>nvidia-smi
Sat Oct 05 00:06:31 2019
```

| NVIDIA-SMI 436.48 |               |          |                  | Driver Version: 436.48 |          |             |  | CUDA Version: 10.1 |  |  |  |
|-------------------|---------------|----------|------------------|------------------------|----------|-------------|--|--------------------|--|--|--|
| GPU               | Name          | TCC/WDDM | Bus-Id           | Disp. A                | Volatile | Uncorr. ECC |  |                    |  |  |  |
| Fan               | Temp          | Perf     | Pwr:Usage/Cap    | Memory-Usage           | GPU-Util | Compute M.  |  |                    |  |  |  |
| 0                 | GeForce 940MX | WDDM     | 00000000:01:00.0 | Off                    |          | N/A         |  |                    |  |  |  |
| N/A               | 41C           | P8       | N/A / N/A        | 37MiB / 2048MiB        | 0%       | Default     |  |                    |  |  |  |

| Processes:                 |     |      |              |  | GPU   | Memory |
|----------------------------|-----|------|--------------|--|-------|--------|
| GPU                        | PID | Type | Process name |  | Usage |        |
| No running processes found |     |      |              |  |       |        |

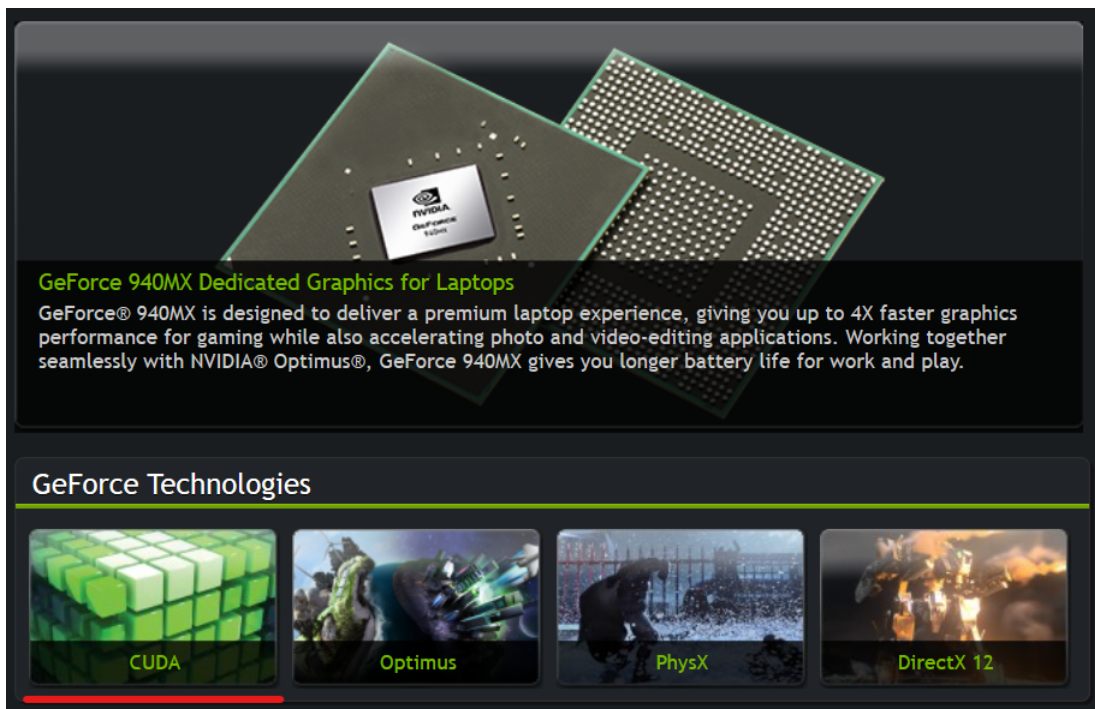
2. 查看自身显卡是否支持 GPU [支持CUDA的显卡算力表](#)



### CUDA-Enabled GeForce and TITAN Products

| GeForce and TITAN Products |                    | GeForce Notebook Products |                    |
|----------------------------|--------------------|---------------------------|--------------------|
| GPU                        | Compute Capability | GPU                       | Compute Capability |
| NVIDIA TITAN RTX           | 7.5                | GeForce RTX 2080          | 7.5                |
| GeForce RTX 2080 Ti        | 7.5                | GeForce RTX 2070          | 7.5                |
| GeForce RTX 2080           | 7.5                | GeForce RTX 2060          | 7.5                |
| GeForce RTX 2070           | 7.5                | GeForce GTX 1080          | 6.1                |
| GeForce RTX 2060           | 7.5                | GeForce GTX 1070          | 6.1                |
| NVIDIA TITAN V             | 7.0                | GeForce GTX 1060          | 6.1                |
| NVIDIA TITAN Xp            | 6.1                | GeForce GTX 980           | 5.2                |
| NVIDIA TITAN X             | 6.1                | GeForce GTX 980M          | 5.2                |
| GeForce GTX 1080 Ti        | 6.1                | GeForce GTX 970M          | 5.2                |

如果没有在算力表找到自己的对应显卡型号，并不代表不支持CUDA，到相应的页面去看，可以看到该显卡支持。

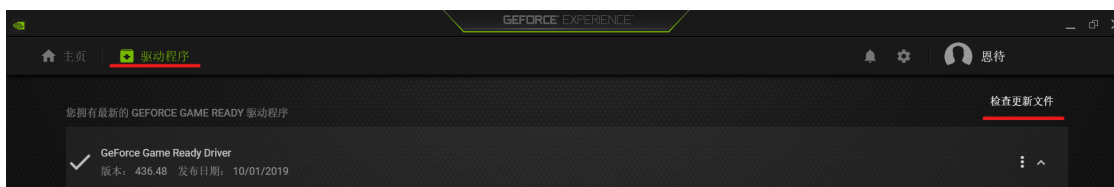


2. 搜索显卡驱动程序，根据我的显卡型号，搜索栏输入如下，最新的驱动程序如下。

网址：[驱动程序官网](#)



另一种方法是在自己电脑搜索 **GeForce Experience**，然后更新安装



3. 选择对应的配置，下载 **CUDA**，[CUDA toolkit](#)

Select Target Platform

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

Operating System

WindowsLinuxMac OSX

Architecture

x86\_64

Version

108.17Server 2019Server 2016Server 2012 R2

Installer Type

exe (network)exe (local)

Download Installer for Windows 10 x86\_64

The base installer is available for download below.

> Base Installer

Download (19.7 MB)

Installation Instructions:

- Double click cuda\_10.1.243\_win10\_network.exe
- Follow on-screen prompts

确认 `CUDA` 安装成功

```
C:\Users\15487>nvcc -V
nvcc: NVIDIA (R) Cuda compiler driver
Copyright (c) 2005-2019 NVIDIA Corporation
Built on Sun Jul 28 19:12:52 Pacific Daylight Time 2019
Cuda compilation tools, release 10.1, V10.1.243

C:\Users\15487>set cuda
CUDA_PATH=C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v10.1
CUDA_PATH_V10_1=C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v10.1
```

需要注意的是：在 `C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v10.1\bin` 你是找不到 `cublas64_100.dll` 的，这导致之后在运行 `paddle.fluid.install_check.run_check()` 的时候会报错，`module can't find`，官方的文档里也显示最新的标记未100，但是不要慌，你会发现文件夹下有 `cublas64_10.dll`，将它复制出来一个，把10改成100后放回去。

#### 4. 下载对应的 `cuDNN`，[cuDNN下载（需要注册账号）](#)

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

Note: Please refer to the [Installation Guide](#) for release prerequisites, including supported GPU architectures and compute capabilities, before downloading.

For more information, refer to the cuDNN Developer Guide, Installation Guide and Release Notes on the [Deep Learning SDK Documentation](#) web page.

Download cuDNN v7.6.4 (September 27, 2019), for CUDA 10.1

Library for Windows, Mac, Linux, Ubuntu and RedHat/Centos(x86\_64architecture)

cuDNN Library for Windows 7

cuDNN Library for Windows 10

cuDNN Library for Linux

根据 [installation guide](#) 完成 `cuDNN` 的安装，最重要的其实就是第三步，第四步的话会发现其实在安装 `CUDA` 的时候已经完成了。

3. Copy the following files into the CUDA Toolkit directory.
  - a. Copy `<installpath>\cuda\bin\cuda64_7.dll` to `C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v9.0\bin`.
  - b. Copy `<installpath>\cuda\include\cuda.h` to `C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v9.0\include`.
  - c. Copy `<installpath>\cuda\lib\x64\cuda.lib` to `C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v9.0\lib\x64`.
4. Set the following environment variables to point to where cuDNN is located. To access the value of the `$(CUDA_PATH)` environment variable, perform the following steps:
  - a. Open a command prompt from the Start menu.
  - b. Type `Run` and hit Enter.
  - c. Issue the `control sysdm.cpl` command.
  - d. Select the Advanced tab at the top of the window.
  - e. Click Environment Variables at the bottom of the window.
  - f. Ensure the following values are set:

```
Variable Name: CUDA_PATH
Variable Value: C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v9.0
```

5. 现在应该已经完成了，按照 [paddlepaddle 安装官网](#) 的指示一步步做下来就好了。

如果有问题，**检查驱动程序是不是最新**（否则容易出现明明已安装的包却无法导入的**问题**）