

# Installing PyTorch on Windows 10

## 0. Prerequisites(optional)

### 0.1 CUDA version required

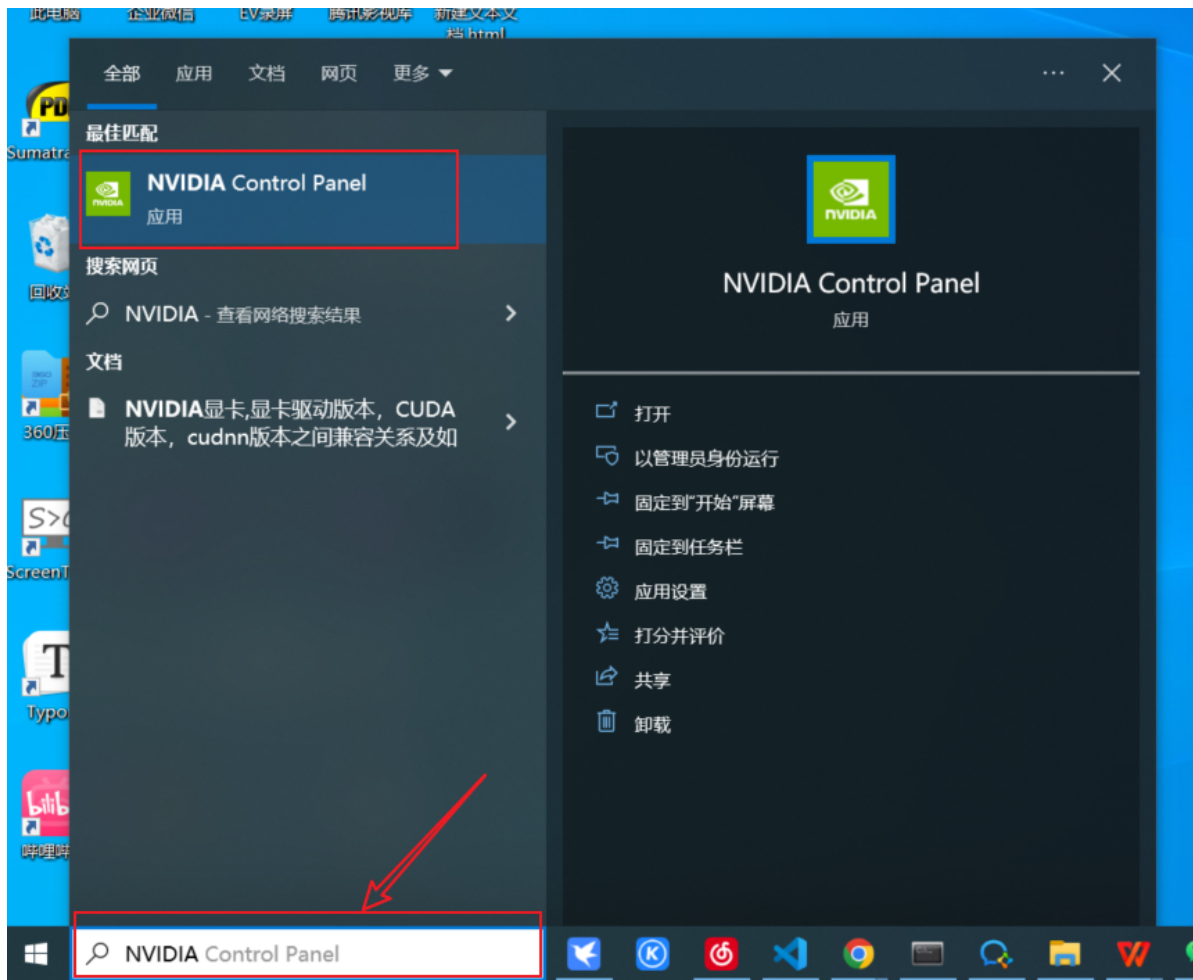
If your computer has a GPU, please visit the [PyTorch site](#) to check which version of CUDA is required for the version of pytorch you want to install and make sure that your graphics card driver supports this version of CUDA. If not, update the graphics card driver.

PyTorch Build	Stable (1.12.1)		Preview (Nightly)		LTS (1.8.2)
Your OS	Linux		Mac		Windows
Package	Conda	Pip		LibTorch	Source
Language	Python			C++ / Java	
Compute Platform	CUDA 10.2	CUDA 11.3	CUDA 11.6	ROCm 5.1.1	CPU
Run this Command:	conda install pytorch torchvision torchaudio cudatoolkit=11.3 -c pytorch				

As we can see, **pytorch 1.12 requires CUDA 11.3**

### 0.2 Check CUDA version

- Open NVIDA Control Panel

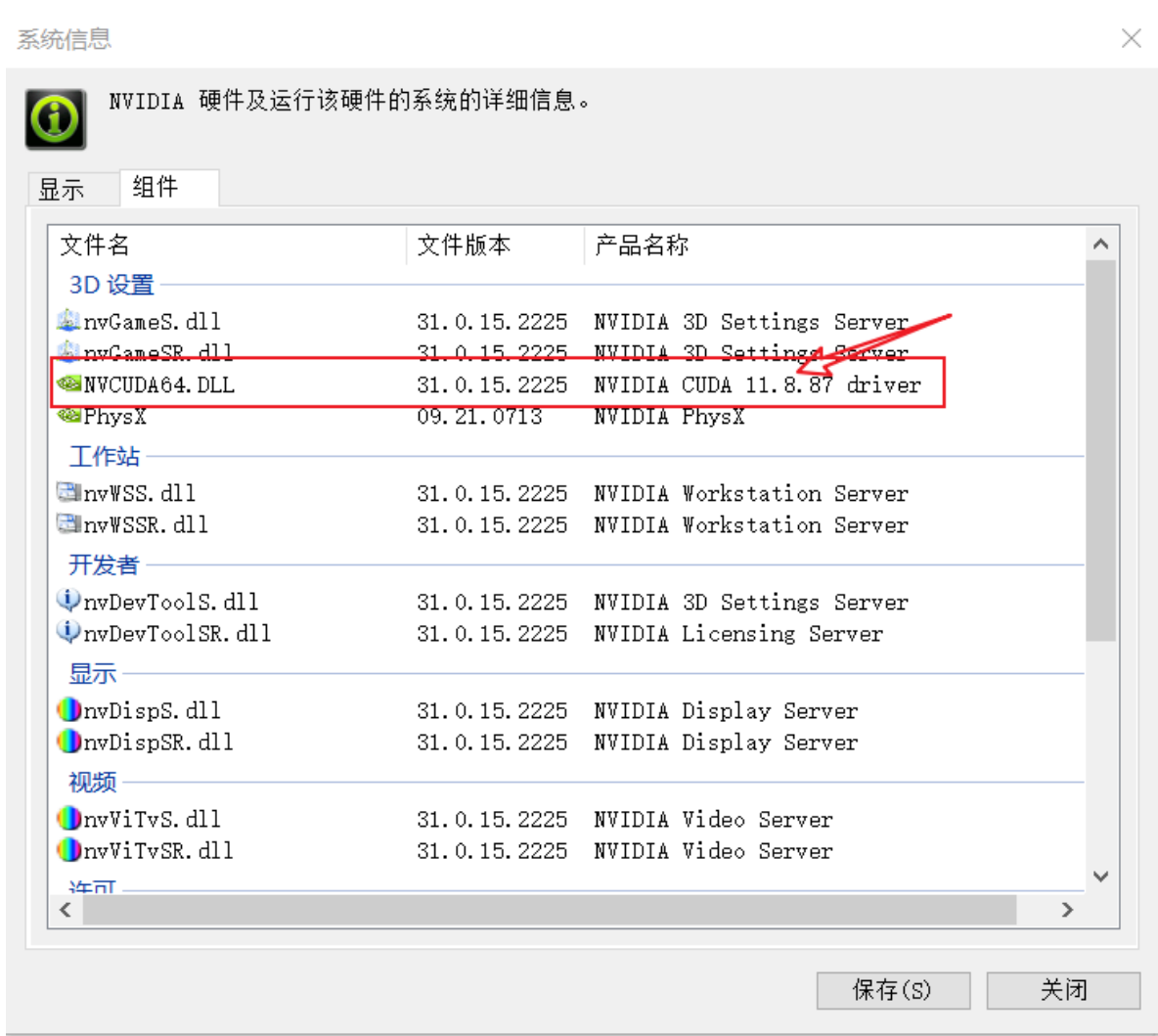


- Check the NVIDIA driver information



- NVIDIA driver version





Here we can see that the highest supported version of CUDA for the driver is 11.8.

**Note: This indicates the highest supported version, and the driver is backward compatible with CUDA versions lower than 11.8.**

For more details ,please visit this link: <https://docs.nvidia.com/cuda/cuda-toolkit-release-notes/index.html>

**Table 2. CUDA Toolkit and Minimum Required Driver Version for CUDA Minor Version Compatibility**

CUDA Toolkit	Minimum Required Driver Version for CUDA Minor Version Compatibility*		
	Linux x86_64 Driver Version	Linux AArch64 Driver Version	Windows x86_64 Driver Version
CUDA 11.8.x	≥450.80.02		≥452.39
CUDA 11.7.x			
CUDA 11.6.x			
CUDA 11.5.x			
CUDA 11.4.x			
CUDA 11.3.x			
CUDA 11.2.x			
CUDA 11.1 (11.1.0)			
CUDA 11.0 (11.0.3)	≥450.36.06**	≥450.28.01**	≥451.22**

Here my computer's graphics card driver supports the version of pytorch-gpu we want to install. If yours does not, then please find a way to update your graphics card driver.

## 1. Installing PyTorch

We now go to the [PyTorch site \(https://pytorch.org/get-started/locally/\)](https://pytorch.org/get-started/locally/) and select the best configuration for our computer.

Select the relevant PyTorch installation details:

- PyTorch build – stable.
- Your OS – Windows
- Package – pip
- Language – Python
- Compute Platform – CPU, or choose your version of Cuda.

## No CUDA

PyTorch Build	Stable (1.12.1)			Preview (Nightly)		LTS (1.8.2)	
Your OS	Linux			Mac		Windows	
Package	Conda		Pip		LibTorch		Source
Language	Python				C++ / Java		
Compute Platform	CUDA 10.2	CUDA 11.3	CUDA 11.6	ROCm 5.1.1		CPU	
Run this Command:	pip3 install torch torchvision torchaudio						

## With CUDA

PyTorch Build	Stable (1.12.1)		Preview (Nightly)		LTS (1.8.2)
Your OS	Linux		Mac		Windows
Package	Conda	Pip	LibTorch		Source
Language	Python			C++ / Java	
Compute Platform	CUDA 10.2	CUDA 11.3	CUDA 11.6	ROCm 5.1.1	CPU
Run this Command:	<pre>pip3 install torch torchvision torchaudio --extra-index-url https://download.pytorch.org/whl/cu113</pre>				

If you have a graphics card, select the **Compute Platform CUDA** configuration. If you do not have a dedicated GPU, select **Compute Platform CPU**.

Keep **Conda** as your Package Manager.

Once you have completed the various selections, copy the command that can be found under **Run this command**.

From the Windows menu, **run Anaconda Navigator** and then **launch the CMD.exe Prompt**.

In the window that opens, **paste the command copied earlier and execute it**. This will start the installation of PyTorch in our environment.

## 2. Checking the Setup

To ensure that PyTorch was installed correctly, we can verify the installation by running sample PyTorch code. Here we will construct a randomly initialized tensor.

From the command line, type:

```
python
```

```
(pytorch) C:\Users\Administrator>python
Python 3.9.13 | packaged by conda-forge | (main, May 27 2022, 16:50:36) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
```

then enter the following code:

```
import torch
x = torch.rand(5, 3)
print(x)
```

```
(pytorch) C:\Users\Administrator>python
Python 3.9.13 | packaged by conda-forge | (main, May 27 2022, 16:50:36) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import torch
>>> x = torch.rand(5, 3)
>>> print(x)
tensor([[0.4398, 0.3889, 0.0623],
        [0.8114, 0.5326, 0.1523],
        [0.8367, 0.9868, 0.6560],
        [0.9290, 0.7729, 0.5983],
        [0.1851, 0.5493, 0.6258]])
>>>
```

Additionally, to check if your GPU driver and CUDA is enabled and accessible by PyTorch, run the following commands to return whether or not the CUDA driver is enabled:

```
import torch
torch.cuda.is_available()
```

```
>>> import torch
>>> torch.cuda.is_available()
True
>>>
```

```
torch.version.cuda
```

```
>>> import torch
>>> torch.cuda.is_available()
True
>>> torch.version.cuda
'11.3'
>>>
```

### 3. Next Steps

[Pytorch tutorials](#)