

Checklist for running Tensorflow on Windows with GPU. Oct. 2024.

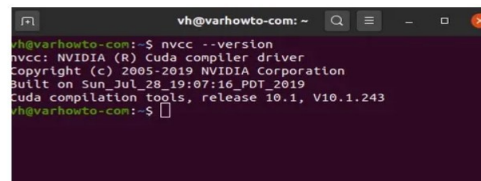


Simon Laub · Follow
3 min read · 8 hours ago



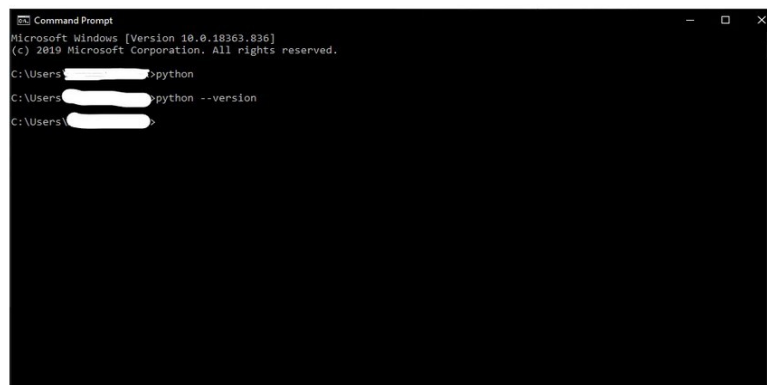
October 2024. It all (Tf on windows with gpu) appears to be a little fickle these days? But here is a checklist which gets it up and running, on windows, here in October 2024.

Clearly, start by installing Cuda, and have that up and running.



```
vh@varhowto-com: ~  
vh@varhowto-com:~$ nvcc --version  
nvcc: NVIDIA (R) Cuda compiler driver  
copyright (c) 2005-2019 NVIDIA Corporation  
built on Sun_Jul_20_19:07:16_PDT_2019  
cuda compilation tools, release 10.1, V10.1.243  
vh@varhowto-com:~$
```

Then, tricky part, install Python 3.10.



```
Microsoft Windows [Version 10.0.18363.836]  
(c) 2019 Microsoft Corporation. All rights reserved.  
C:\Users\>python  
C:\Users\>python --version  
C:\Users\>
```

Python — V, gave 3.10.5 in my installation. Later versions leads to trouble further on in this installation.

Using the 3.10.5 Python then to create a virtual environment.



Table of Contents

- venv — Creation of virtual environments
 - Creating virtual environments
 - How venvs work
 - API

Creating virtual environments

Virtual environments are created by executing the venv module:

```
python -m venv /path/to/new/virtual/environment
```

This creates the target directory (including parent directories as needed) and places a pyvenv

Which then obviously, needs, to be activated. Script activate, before moving on with the installation.

Using pip

To install an older version of TensorFlow using pip, you'll need to specify the version number in the pip install command. For example, if you want to install TensorFlow version 1.15.0, you would run the following command:

```
pip install tensorflow==1.15.0
```

```
Name: tensorflow
Version: 2.10.0
Summary: TensorFlow is an open source machine learning framework for everyone.
Home-page: https://www.tensorflow.org/
Author: Google Inc.
Author-email: packages@tensorflow.org
```

2.10 appeared to be working...

tensorflow-cpu 2.18.0

```
pip install tensorflow-cpu
```

For CPU-only Tensorflow.

Not done yet, though. In this setup the path goes through tf-directml-plugin:

Enable GPU acceleration for TensorFlow 2 with tensorflow-directml-plugin

Article • 05/22/2024 • 3 contributors

[Feedback](#)

This release provides students, beginners, and professionals a way to run machine learning (ML) training on their existing DirectX 12-enabled hardware by using the DirectML Plugin for TensorFlow 2.

Note

You can install `tensorflow-directml-plugin` by using Python x86-64 3.10. But `tensorflow-directml-plugin` isn't supported for version 3.11 and later.

Which was why the virtual environment had to be created with Python 3.10

Check if it works.

On CPU only:

```
Epoch 7/10  
1563/1563 [=====] - 96s 61ms/step - loss: 0.7544 - accuracy: 0.7354 - val_loss: 0.79  
Epoch 8/10  
1563/1563 [=====] - 102s 66ms/step - loss: 0.7129 - accuracy: 0.7482 - val_loss: 0.9  
Epoch 9/10  
1563/1563 [=====] - 106s 68ms/step - loss: 0.6810 - accuracy: 0.7612 - val_loss: 0.7  
Epoch 10/10
```

On GPU:

```
Epoch 7/10 [=====] - 9s 6ms/step - loss: 0.7544 - accuracy: 0.7354 - val_loss: 0.79  
Epoch 8/10  
1563/1563 [=====] - 9s 5ms/step - loss: 0.4683 - accuracy: 0.8338 - val_loss: 0.8448 - val_accuracy: 0.7303  
Epoch 9/10  
1563/1563 [=====] - 8s 5ms/step - loss: 0.4560 - accuracy: 0.8385 - val_loss: 0.9245 - val_accuracy: 0.7142  
Epoch 10/10  
1563/1563 [=====] - 9s 6ms/step - loss: 0.4339 - accuracy: 0.8462 - val_loss: 0.8620 - val_accuracy: 0.7291
```

Hurray. It works (10 times faster).

But, repeat, fickle.

For Linux, check out [Installing TensorFlow with GPU Acceleration on Linux](#), or similar.

And notice, that the checklist above is only meant to be a *checklist*. Things change, quickly, and individual setups might vary slightly.

TensorFlow

Windows

Gpu

Setup

Troubleshooting