

# tensorflow

- description : tensorflow
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## Tensorflow

### Install

Ubuntu 18.04 (GPU version)

1. CUDA Toolkit 10.1 update2

```
https://developer.nvidia.com/cuda-toolkit-archive ( 가 )
```

tip: Tensorflow2 gpu 가

2. cuDNN v7.6.4

```
https://developer.nvidia.com/rdp/cudnn-archive ( 가 )
```

tip: CUDA Toolkit 10.1 update2

3. python3.8

```
https://linuxize.com/post/how-to-install-python-3-8-on-ubuntu-18-04/
```

4. NVIDIA driver

```
$> nvidia-smi  
$> ubuntu-drivers devices  
$> sudo ubuntu-drivers autoinstall
```

<https://linuxconfig.org/how-to-install-the-nvidia-drivers-on-ubuntu-18-04-bionic-beaver-linux>  
NVIDIA

### gpu code

```
from tensorflow.python.client import device_lib
```

## device\_lib.list\_local\_devices()

```
명령 프롬프트 - python
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\phosn\python
Python 3.7.3 (default, Mar 27 2019, 17:13:21) [AMD64] :: Anaconda, Inc. on win32

Warning:
This Python interpreter is in a conda environment, but the environment has
not been activated. Libraries may fail to load. To activate this environment
please see https://conda.io/activation

Type "help", "copyright", "credits" or "license()" for more.
>>> from tensorflow.python.client import device_lib
2019-12-30 15:24:06.176020: I tensorflow/stream_executor/platform/default/dso_loader.cc:44] Successfully opened dynamic library cudart64_100.dll
>>> device_lib.list_local_devices()
2019-12-30 15:24:16.145105: I tensorflow/core/platform/cpu_feature_guard.cc:142] Your CPU supports instructions that this TensorFlow binary was not compiled
to use: AVX2
2019-12-30 15:24:16.152572: I tensorflow/stream_executor/platform/default/dso_loader.cc:44] Successfully opened dynamic library nvidia.dll
2019-12-30 15:24:17.347524: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1618] Found device 0 with properties:
name: GeForce GTX 1050 with Max-Q Design major: 6 minor: 1 memoryClockRate(GHz): 1.3285
pciBusID: 0000:02:00:0
2019-12-30 15:24:17.353958: I tensorflow/stream_executor/platform/default/dlopen_checker_stub.cc:25] GPU libraries are statically linked, skip dlopen check.
2019-12-30 15:24:17.358448: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1746] Adding visible gpu devices: 0
2019-12-30 15:24:18.211620: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1159] Device Interconnect StressExecutor with strength 1 edge matrix:
2019-12-30 15:24:18.215098: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1165] 0
2019-12-30 15:24:18.217345: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1178] 0: N
2019-12-30 15:24:18.220051: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1304] Created TensorFlow device (/device:GPU:0 with 3003 MB memory) => physical
GPU device: 0, name: GeForce GTX 1050 with Max-Q Design, pci bus id: 0000:02:00:0, compute capability: 6.1
(device:GPU:0)
name: "/device:GPU:0"
device_type: "GPU"
memory_limit: 289435456
locality {}
incarnation: 934953327975959300
name: "/device:GPU:0"
device_type: "GPU"
memory_limit: 3149044121
locality {
  bus_id: 1
  links {}
}
incarnation: 10703156756438546676
physical_device_desc: "device: 0, name: GeForce GTX 1050 with Max-Q Design, pci bus id: 0000:02:00:0, compute capability: 6.1"
>>>
```

### Ref

[tensorflow GPU](#)

### Tip

[33. TensorFlow 2.0 Release](#)    - Tf.Session & Tf.Placeholder    , @Tf.Function, Tf\_upgrade\_v2

## Troubleshooting

### Ref

, [tensorflow](#)

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