setting

- ubuntu 18.04 LTS version
- GTX 1080 Ti
- 참고: https://www.tensorflow.org/install/gpu

software requirements(for GPU)

install flow

- Verify the system has a CUDA-capable GPU.
- Verify the system is running a supported version of Linux.
- Verify the system has gcc installed.
- Verify the system has the correct kernel headers and development packages installed.
- Download the NVIDIA CUDA Toolkit.
- Handle conflicting installation methods.

Ubuntu 16.04 or later (TensorFlow 2.0 CPU version)

- ubuntu 18.04 LTS version

CUDA®-enabled cards.

- Geforce RTX 1080: Compute Capability = 6.1

NVIDIA® GPU drivers —CUDA 10.0 requires 410.x or higher.

- ubuntu 18.04에 맞는 드라이버 설치 가능

CUDA® Toolkit —TensorFlow supports CUDA 10.0 (TensorFlow >= 1.13.0)

- https://docs.nvidia.com/cuda/archive/10.0/cuda-installation-guide-linux/index.html

Table 1. Native Linux Distribution Support in CUDA 10.0

Distribution	Kernel*	GCC	GLIBC	ICC	PGI	XLC	CLANG
x86_64							
RHEL 7.5	3.10	4.8.5	2.17	18.0	18.x	NO	6.0.0
RHEL 6.10	2.6.32	4.4.7	2.12				
CentOS 7.5	3.10	4.8.5	2.17				
CentOS 6.10	2.6.32	4.4.7	2.12				
Fedora 27	4.13.9	7.3.1	2.26				
OpenSUSE Leap 15.0	4.12.14	7.3.1	2.26				
SLES 15.0	4.12.14	7.2.1	2.26				
Ubuntu 18.04.1 (**)	4.15.0	7.3.0	2.27				
Ubuntu 16.04.5 (**)	4.4	5.4.0	2.23				
Ubuntu 14.04.5 (**)	3.13	4.8.4	2.19				
POWER8(***)							
RHEL 7.5	3.10	4.8.5	2.17	NO	18.x	13.1.x, 16.1.x	6.0.0
Ubuntu 18.04.1	4.15.0	7.3.0	2.27	NO	18.x	13.1.x, 16.1.x	6.0.0
POWER9(****)							
Ubuntu 18.04.1	4.15.0	7.3.0	2.27	NO	18.x	13.1.x, 16.1.x	6.0.0
RHEL 7.5 IBM Power LE	4.14.0	4.8.5	2.17	NO	18.x	13.1.x, 16.1.x	6.0.0

- For Ubuntu LTS on x86-64, both the HWE kernel (e.g. 4.13.x for 16.04.4) and the server LTS kernel (e.g. 4.4.x for 16.04) are supported in CUDA 10.0.
- kernel download: https://kernel.ubuntu.com/~kernel-ppa/mainline/
- GCC 7.3.0: https://gcc.gnu.org/onlinedocs/7.3.0/
- CUDA 10을 Ubuntu 18.04에 설치하는 방법이 TensorFlow 홈페이지에 소개되어 있음

CUPTI ships with the CUDA Toolkit.

- CUPTI 1.0: https://developer.nvidia.com/CUPTI-1_0

cuDNN SDK (>= 7.4.1)

- cuDNN 7.6.4 for CUDA 10.0: https://developer.nvidia.com/rdp/cudnn-archive

(Optional)_ TensorRT 5.0 to improve latency and throughput for inference on some models.

hardware requirements

- NVIDIA® GPU card with CUDA® Compute Capability 3.5 or higher
    - Geforce RTX 1080: Compute Capability = 6.1