Install TensorFlow with pip

TensorFlow 2.0 Alpha is available

- `tensorflow==2.0.0-alpha0` —Preview TF 2.0 Alpha (/alpha) build for CPU-only *(unstable)*
- `tensorflow-gpu==2.0.0-alpha0` —Preview TF 2.0 Alpha (/alpha) build with GPU support (https://www.tensorflow.org/install/gpu) *(unstable, Ubuntu and Windows)*

Available packages

- `tensorflow` —Latest stable release for CPU-only *(Ubuntu and Windows)*
- `tensorflow-gpu` —Latest stable release with GPU support (https://www.tensorflow.org/install/gpu) *(Ubuntu and Windows)*
- `tf-nightly` —Preview nightly build for CPU-only *(unstable)*
- `tf-nightly-gpu` —Preview nightly build with GPU support (https://www.tensorflow.org/install/gpu) *(unstable, Ubuntu and Windows)*

System requirements

- Ubuntu 16.04 or later (64-bit)
- macOS 10.12.6 (Sierra) or later (64-bit) *(no GPU support)*

- Windows 7 or later (64-bit) *(Python 3 only)*
- Raspbian 9.0 or later

Hardware requirements

- Starting with TensorFlow 1.6, binaries use AVX instructions (https://en.wikipedia.org/wiki/Advanced_Vector_Extensions#CPUs_with_AVX) which may not run on older CPUs.
- Read the GPU support guide (https://www.tensorflow.org/install/gpu) to set up a CUDA®-enabled GPU card on Ubuntu or Windows.

1. Install the Python development environment on your system

Python 3 | Python 2.7

Check if your Python environment is already configured:

Requires Python > 3.4

```
$ python3 --version
$ pip3 --version
$ virtualenv --version
```

If these packages are already installed, skip to the next step.
Otherwise, install Python (https://www.python.org/), the pip package manager (https://pip.pypa.io/en/stable/installing/), and Virtualenv (https://virtualenv.pypa.io/en/stable/):

Ubuntu (#ubuntu)mac OS (#mac-os)WindowsRaspberry Pi (#raspberry-pi)Other (#other)

Install the *Microsoft Visual C++ 2015 Redistributable Update 3*. This comes with *Visual Studio 2015* but can be installed separately:

1. Go to the Visual Studio downloads (https://visualstudio.microsoft.com/vs/older-downloads/),
2. Select *Redistributables and Build Tools*,
3. Download and install the *Microsoft Visual C++ 2015 Redistributable Update 3*.

Make sure long paths are enabled (https://superuser.com/questions/1119883/windows-10-enable-ntfs-long-paths-policy-option-missing) on Windows.

Install the *64-bit* Python 3 release for Windows (https://www.python.org/downloads/windows/) (select `pip` as an optional feature).

```
C:\> pip3 install -U pip virtualenv
```

2. Create a virtual environment (recommended)

Python virtual environments are used to isolate package installation from the system.

Ubuntu / mac OS (#ubuntu--m...WindowsConda (#conda)

Create a new virtual environment by choosing a Python interpreter and making a `.\venv` directory to hold it:

```
C:\> virtualenv --system-site-packages -p python3 ./venv
```

Activate the virtual environment:

```
(venv) C:\> .\venv\Scripts\activate
```

Install packages within a virtual environment without affecting the host system setup. Start by upgrading `pip`:

```
(venv) C:\> pip install --upgrade pip
(venv) C:\> pip list  # show packages installed within the virtual environment
```

And to exit virtualenv later:

```
(venv) C:\> deactivate  # don't exit until you're done using TensorFlow
```

3. Install the TensorFlow pip package

Choose one of the following TensorFlow packages to install from PyPI (https://pypi.org/project/tensorflow/):

- `tensorflow` —Latest stable release for CPU-only *(recommended for beginners)*
- `tensorflow-gpu` —Latest stable release with GPU support (https://www.tensorflow.org/install/gpu) *(Ubuntu and Windows)*
- `tf-nightly` —Preview nightly build for CPU-only *(unstable)*
- `tf-nightly-gpu` —Preview nightly build with GPU support (https://www.tensorflow.org/install/gpu) *(unstable, Ubuntu and Windows)*
- `tensorflow==2.0.0-alpha0` —Preview TF 2.0 Alpha build for CPU-only *(unstable)*
- `tensorflow-gpu==2.0.0-alpha0` —Preview TF 2.0 Alpha build with GPU support (https://www.tensorflow.org/install/gpu) *(unstable, Ubuntu and Windows)*

Package dependencies are automatically installed. These are listed in the **`setup.py`** (https://github.com/tensorflow/tensorflow/blob/master/tensorflow/tools/pip_package/setup.py) file under **`REQUIRED_PACKAGES`**.

Virtualenv installSystem install (#system-install)

```
(venv) $ pip install --upgrade tensorflow
```

Verify the install:

```
(venv) $ python -c "import tensorflow as tf; tf.enable_eager_execution(); print(tf.reduce_sum(tf.random_nor
```

Success: TensorFlow is now installed. Read the tutorials (https://www.tensorflow.org/tutorials) to get started.

Package location

A few installation mechanisms require the URL of the TensorFlow Python package. The value you specify depends on your Python version.

Version	URL
Linux	
Python 2.7 CPU-only	https://storage.googleapis.com/tensorflow/linux/cpu/tensorflow-1.13.1-cp27-none-linux_x86_64.whl
Python 2.7 GPU support	https://storage.googleapis.com/tensorflow/linux/gpu/tensorflow_gpu-1.13.1-cp27-none-linux_x86_64.whl
Python 3.4 CPU-only	https://storage.googleapis.com/tensorflow/linux/cpu/tensorflow-1.13.1-cp34-cp34m-linux_x86_64.whl
Python 3.4 GPU support	https://storage.googleapis.com/tensorflow/linux/gpu/tensorflow_gpu-1.13.1-cp34-cp34m-linux_x86_64.whl
Python 3.5 CPU-only	https://storage.googleapis.com/tensorflow/linux/cpu/tensorflow-1.13.1-cp35-cp35m-linux_x86_64.whl
Python 3.5 GPU support	https://storage.googleapis.com/tensorflow/linux/gpu/tensorflow_gpu-1.13.1-cp35-cp35m-linux_x86_64.whl
Python 3.6 CPU-only	https://storage.googleapis.com/tensorflow/linux/cpu/tensorflow-1.13.1-cp36-cp36m-linux_x86_64.whl
Python 3.6 GPU support	https://storage.googleapis.com/tensorflow/linux/gpu/tensorflow_gpu-1.13.1-cp36-cp36m-linux_x86_64.whl
Python 3.7 CPU-only	https://storage.googleapis.com/tensorflow/linux/cpu/tensorflow-1.13.1-cp37-cp37m-linux_x86_64.whl

Python 3.7 GPU support	https://storage.googleapis.com/tensorflow/linux/gpu/tensorflow_gpu-1.13.1-cp37-cp37m-linux_x86_64.whl
macOS (CPU-only)	
Python 2.7	https://storage.googleapis.com/tensorflow/mac/cpu/tensorflow-1.13.1-py2-none-any.whl
Python > 3.4	https://storage.googleapis.com/tensorflow/mac/cpu/tensorflow-1.13.1-py3-none-any.whl
Windows	
Python 3.5 CPU-only	https://storage.googleapis.com/tensorflow/windows/cpu/tensorflow-1.13.1-cp35-cp35m-win_amd64.whl
Python 3.5 GPU support	https://storage.googleapis.com/tensorflow/windows/gpu/tensorflow_gpu-1.13.1-cp35-cp35m-win_amd64.whl
Python 3.6 CPU-only	https://storage.googleapis.com/tensorflow/windows/cpu/tensorflow-1.13.1-cp36-cp36m-win_amd64.whl
Python 3.6 GPU support	https://storage.googleapis.com/tensorflow/windows/gpu/tensorflow_gpu-1.13.1-cp36-cp36m-win_amd64.whl