How to install and run TensorFlow on a Windows PC

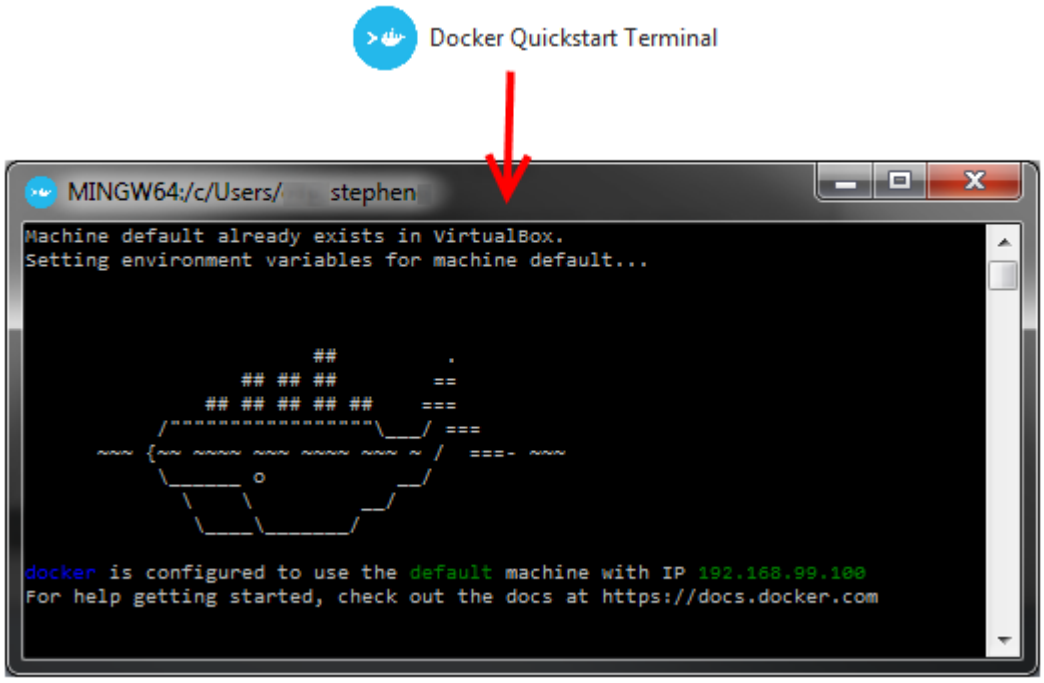
If you're involved with machine learning, you probably heard the news by now that Google open-sourced their machine learning library TensorFlow a few weeks ago. Excited to dive into TensorFlow, I went to their download and installation page and was disappointed to discover they didn't offer any support or instructions for Windows users.

But they did have a Docker image! In case you haven't heard, Docker is a container that wraps up a piece of software in a complete filesystem that contains everything it needs to run: code, runtime, system tools, and system libraries. And Docker is available on Windows.

How I was able to run TensorFlow on my Windows machine

First, I installed the Docker toolbox for Windows.

Then I opened up the Docker Quick start Terminal.



It created a default Docker machine for me. You can view the Docker machines available by typing `docker-machine ls`

I then created a second (new) Docker machine named `vdocker` by typing:

```
$ docker-machine create vdocker -d virtualbox
```

Because I was behind a corporate proxy, I had to connect to that machine and configure it to use my proxy. **This step may not be necessary for you**. If you're having other issues with Docker due to a firewall or web proxy, [see my post here]

```
$ docker-machine ssh vdocker
sudo -s
echo "export HTTP_PROXY=http://proxyhost:8080" >> /var/lib/boot2docker/profile
echo "export HTTPS_PROXY=http://proxyhost:8080" >> /var/lib/boot2docker/profile
exit
$ docker-machine restart vdocker
```

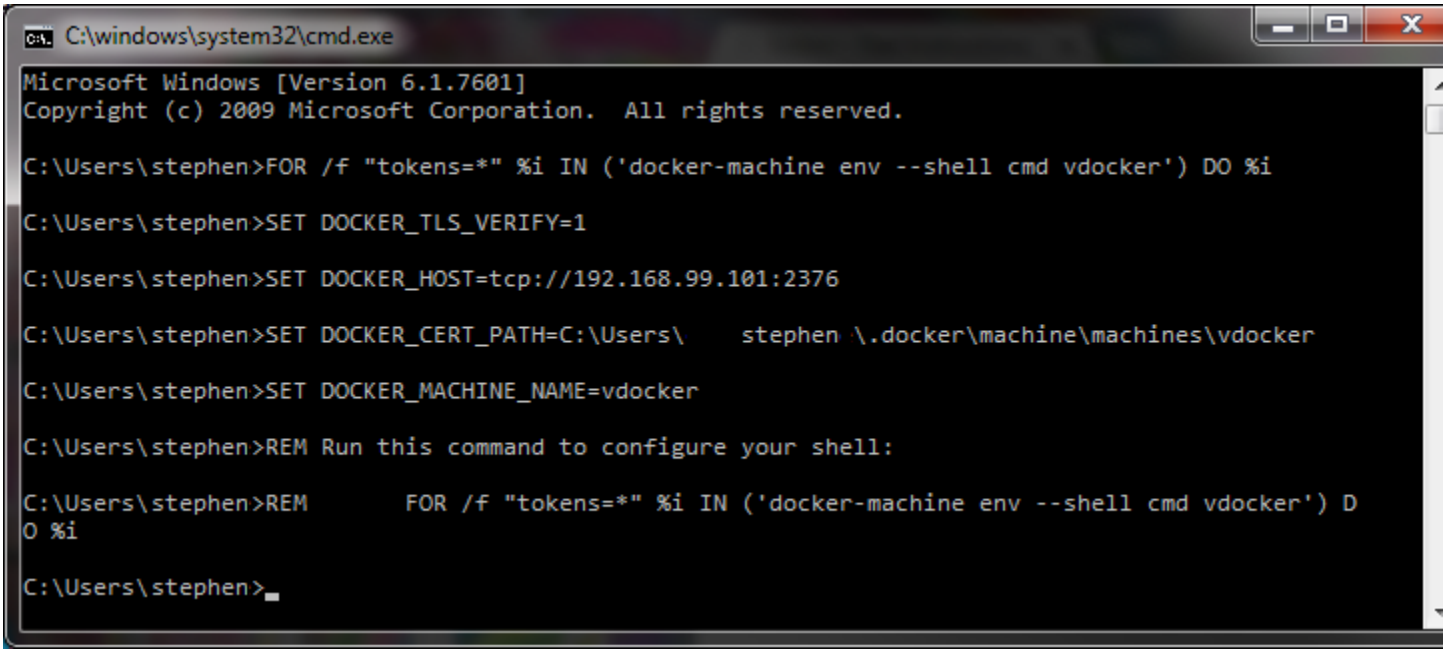
Now if you type `docker-machine ls` you should see your two Docker machines

```
NAME      ACTIVE   DRIVER       STATE     URL                         SWARM
default   *        virtualbox   Running   tcp://192.168.99.100:2376
vdocker   -        virtualbox   Running   tcp://192.168.99.101:2376
```

Okay, now the Docker machine called 'vdocker' has been created and configured. Now to actually install TensorFlow. Open a **Windows cmd prompt** (not the Docker terminal) and enter the following:

```
FOR /f "tokens=*" %i IN ('docker-machine env --shell cmd vdocker') DO %i
```

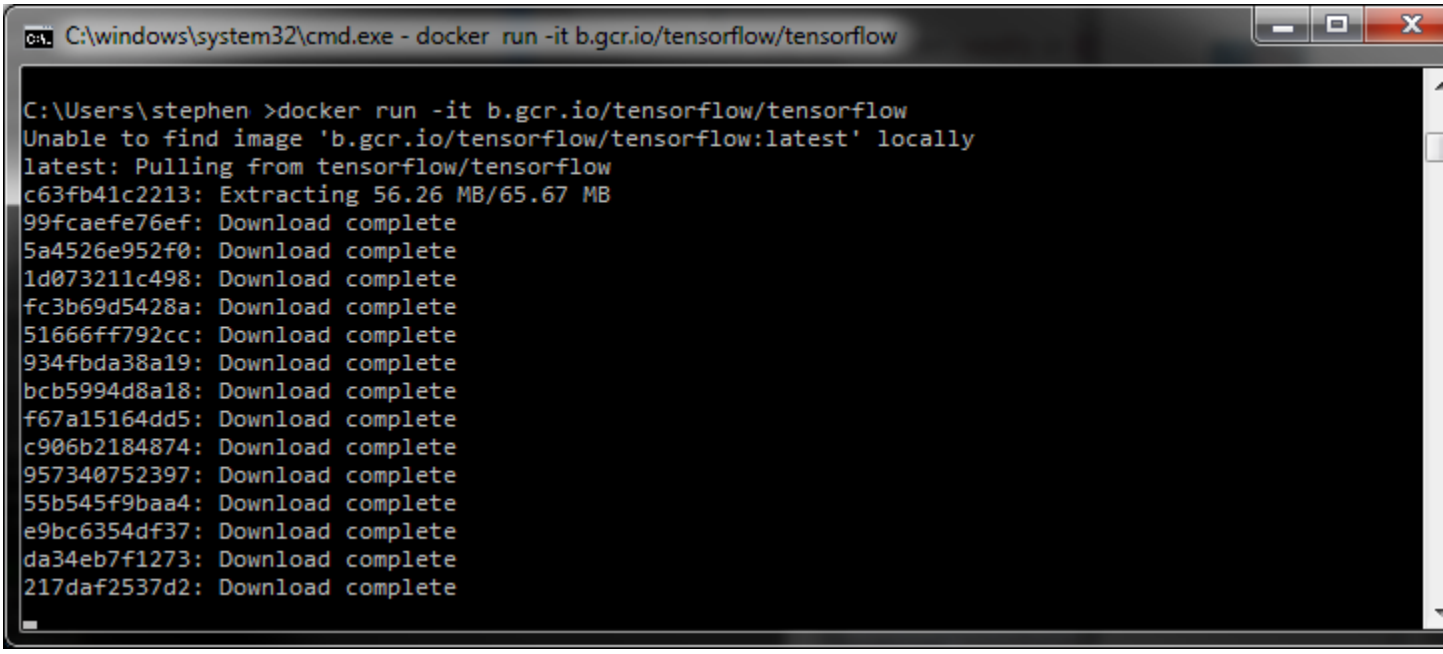
You should see some output from the Docker machine like the following screenshot



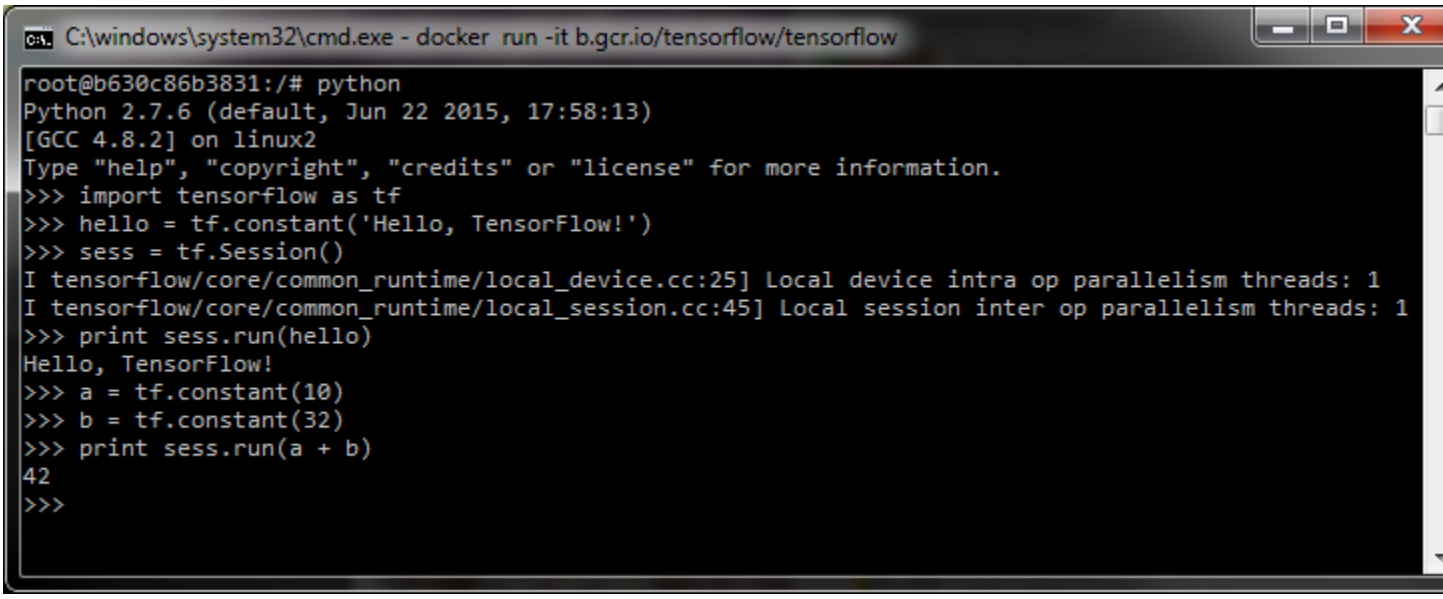
Then type the following line (from the [Docker install page]):

```
docker run -it b.gcr.io/tensorflow/tensorflow
```

And it should start downloading the image which looks like



After it's done pulling the files and uncompressing them you should get a linux shell. Go ahead and type `python` and try out TensorFlow on your Windows machine*!



*Technically you're running TensorFlow in a Docker container in a VirtualBox Linux virtual machine running in a Windows PC.

Here's the code from the above image:

```
$ python
...
>>> import tensorflow as tf
>>> hello = tf.constant('Hello, TensorFlow!')
>>> sess = tf.Session()
>>> print sess.run(hello)
```

```
Hello, TensorFlow!
>>> a = tf.constant(10)
>>> b = tf.constant(32)
>>> print sess.run(a + b)
42
>>>
```

Enjoy using TensorFlow on your Windows computer!