tensorflow on GPU: no known devices, despite cuda's deviceQuery returning a "PASS" result

Note : this question was initially asked on github, but it was asked to be here instead

I'm having trouble running tensorflow on gpu, and it does not seems to be the usual cuda's configuration problem, because everything seems to indicate cuda is properly setup.

The main symptom: when running tensorflow, my gpu is not detected (the code being run, and its output).

What differs from usual issues is that cuda seems properly installed and running `./deviceQuery` from cuda samples is successful (output).

I have two graphical cards:

- an old GTX 650 used for my monitors (I don't want to use that one with tensorflow)
- a GTX 1060 that I want to dedicate to tensorflow

I use:

- tensorflow-1.0.0
- cuda-8.0 (ls -l /usr/local/cuda/lib64/libcud*)
- cudnn-5.1.10
- python-2.7.12
- nvidia-drivers-375.26 (this was installed by cuda and replaced my distro driver package)

I've tried:

- adding `/usr/local/cuda/bin/` to `$PATH`
- forcing gpu placement in tensorflow script using `with tf.device('/gpu:1'):` (and `with tf.device('/gpu:0'):` when it failed, for good measure)
- whitelisting the gpu I wanted to use with `CUDA_VISIBLE_DEVICES`, in case the presence of my old unsupported card did cause problems
- running the script with sudo (because why not)

Here are the outputs of nvidia-smi and nvidia-debugdump -l, in case it's useful.

At this point, I feel like I have followed all the breadcrumbs and have no idea what I could try else. I'm not even sure if I'm contemplating a bug or a configuration problem. Any advice about how to debug this would be greatly appreciated. Thanks!

Update: with the help of Yaroslav on github, I gathered more debugging info by raising log level, but it doesn't seem to say much about the device selection : https://gist.github.com/oelmekki/760a37ca50bf58d4f03f46d104b798bb

Update 2: Using theano detects gpu correctly, but interestingly it complains about cuDNN being too recent, then fallback to cpu (code ran, output). Maybe that could be the problem with tensorflow as well?

`tensorflow`

edited Feb 19 at 15:48

asked Feb 19 at 11:36

Olivier El Mekki
5,587 ● 19 ● 30

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1   as another sanity check you could try another framework (like Theano) with GPU to see if it works, perhaps your GPU setup is somehow broken that's not detected by deviceQuery – Yaroslav Bulatov Feb 19 at 15:16

   Good idea, thanks. I'll try that and report it in the question body. – Olivier El Mekki Feb 19 at 15:20

   that output is suspiciously small, here's what I see when I run with VLOG=1 -- pastebin.com/LQF0j3Ri – Yaroslav Bulatov Feb 19 at 15:25

Yep, I've truncated it past the device selection, as the rest is probably irrelevant. Here is the full log :
gist.github.com/oelmekki/25ea3b1186c2ee7aaa23448547bc23b2 – Olivier El Mekki Feb 19 at 15:26

2 Answers

From the log output, it looks like you are running the CPU version of TensorFlow (PyPI: `tensorflow`), and not the GPU version (PyPI: `tensorflow-gpu`). Running the GPU version would either log information about the CUDA libraries, or an error if it failed to load them or open the driver.

If you run the following commands, you should be able to use the GPU in subsequent runs:

```
$ pip uninstall tensorflow
$ pip install tensorflow-gpu
```

answered Mar 7 at 15:34

mrry
63.7k ● 9 ● 163 ● 229

> Oh, indeed. I followed this doc [1] while tensorflow was already installed, I wasn't aware it needed an other package. Thanks! -- [1] tensorflow.org/tutorials/using_gpu – Olivier El Mekki Mar 8 at 10:26 ✐
>
> 2 Whenever I install tensorflow-gpu, it will reinstall tensorflow. Is this supposed to happen? I can't get it to detect my devices.. – Bouke Versteegh Aug 17 at 14:18
>
> I have the same issue, and I follow your steps, "uninstall tensorlow" and "install tensorflow-gpu" I got this error : AttributeError: 'module' object has no attribute 'Session' – patti_jane Sep 30 at 14:29 ✐

In my case:

```
pip3 uninstall tensorflow
```

is not enough. Because when reinstall with:

```
pip3 install tensorflow-gpu
```

It's still reinstall tensorflow with cpu not gpu. So, before install tensorfow-pgu, I tried to remove all related tensor folders in site-packages uninstall protobuf, and it works!

For conclusion:

```
pip3 uninstall tensorflow
```

Remove all tensor folders in ~\Python35\Lib\site-packages

```
pip3 uninstall protobuf
pip3 install tensorflow-gpu
```

edited Aug 21 at 5:19

answered Aug 20 at 14:50

nguyenhoai890
384 ● 2 ● 10

> 1 Typo suggestion : I suggest you use `pip3` everywhere, in your post. In my case, i removed tensorboard, and tensorflow-1.3.0.dist-info from dist-packages and it unblocked this issue. – piercus Aug 20 at 22:36
>
> 1 hmmm still installs tensorflow for some reason... – dter Aug 24 at 19:33