链滴

矩池云上 nvidia opencl 安装及测试教程

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原文链接：https://ld246.com/article/1627978032959
来源网站：链滴

本教程租用的是2080ti，3.7多框架镜像。

添加nvidia-cuda的阿里源

```
(myconda) root@0b1cde4730d9:/# curl -fsSL https://mirrors.aliyun.com/nvidia-cuda/ubuntu1804/x86_64/7fa2af80.pub | apt-key add -
OK
(myconda) root@0b1cde4730d9:/# echo "deb https://mirrors.aliyun.com/nvidia-cuda/ubuntu1804/x86_64/ /" > /etc/apt/sources.list.d/cuda.list
(myconda) root@0b1cde4730d9:/#
(myconda) root@0b1cde4730d9:/# apt update
Get:1 http://mirrors.aliyun.com/ubuntu bionic InRelease [242 kB]
Ign:2 https://mirrors.aliyun.com/nvidia-cuda/ubuntu1804/x86_64  InRelease
Get:3 http://mirrors.aliyun.com/ubuntu bionic-security InRelease [88.7 kB]
Get:4 http://mirrors.aliyun.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:5 https://mirrors.aliyun.com/nvidia-cuda/ubuntu1804/x86_64  Release [697 B]
Get:6 https://mirrors.aliyun.com/nvidia-cuda/ubuntu1804/x86_64  Release.gpg [836 B]
Get:7 http://mirrors.aliyun.com/ubuntu bionic-proposed InRelease [242 kB]
Get:8 http://mirrors.aliyun.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:9 http://mirrors.aliyun.com/ubuntu bionic/main Sources [1063 kB]
Ign:10 https://mirrors.aliyun.com/nvidia-cuda/ubuntu1804/x86_64  Packages
Get:11 http://mirrors.aliyun.com/ubuntu bionic/restricted Sources [5823 B]
```

curl -fsSL https://mirrors.aliyun.com/nvidia-cuda/ubuntu1804/x86_64/7fa2af80.pub | apt-key dd -
echo "deb https://mirrors.aliyun.com/nvidia-cuda/ubuntu1804/x86_64/ /" > /etc/apt/sources.list.d/cuda.list

apt update

安装nvidia opencl

```
(myconda) root@0b1cde4730d9:/# apt search nvidia-opencl
Sorting... Done
Full Text Search... Done
nvidia-opencl-dev/bionic,now 9.1.85-3ubuntu1 amd64 [installed]
  NVIDIA OpenCL development files

nvidia-opencl-icd-331/bionic-updates 340.108-0ubuntu0.18.04.1 amd64
  Transitional package for nvidia-opencl-icd-340

nvidia-opencl-icd-331-updates/bionic-updates 340.108-0ubuntu0.18.04.1 amd64
  Transitional package for nvidia-opencl-icd-340

nvidia-opencl-icd-340/bionic-updates 340.108-0ubuntu0.18.04.1 amd64
  NVIDIA OpenCL ICD

nvidia-opencl-icd-340-updates/bionic-updates 340.108-0ubuntu0.18.04.1 amd64
  Transitional package for nvidia-opencl-icd-340

nvidia-opencl-icd-346/bionic 352.63-0ubuntu3 amd64
  Transitional package for nvidia-opencl-icd-352

nvidia-opencl-icd-346-updates/bionic 352.63-0ubuntu3 amd64
  Transitional package for nvidia-opencl-icd-352-updates

nvidia-opencl-icd-352/bionic 361.45.11-0ubuntu4 amd64
  Transitional package for nvidia-opencl-icd-361

nvidia-opencl-icd-352-updates/bionic 361.45.11-0ubuntu4 amd64
  Transitional package for nvidia-opencl-icd-361

nvidia-opencl-icd-361/bionic 367.57-0ubuntu5 amd64
  Transitional package for nvidia-opencl-icd-367

nvidia-opencl-icd-361-updates/bionic 361.45.11-0ubuntu4 amd64
  Transitional package for nvidia-opencl-icd-361
```

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apt search nvidia-opencl

```
(myconda) root@0b1cde4730d9:/# apt-get install nvidia-opencl-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
nvidia-opencl-dev is already the newest version (9.1.85-3ubuntu1).
0 upgraded, 0 newly installed, 0 to remove and 122 not upgraded.
75 not fully installed or removed.
After this operation, 0 B of additional disk space will be used.
Do you want to continue? [Y/n] y
Setting up libxcb-present0:amd64 (1.13-2~ubuntu18.04) ...
Setting up libglvnd0:amd64 (1.0.0-2ubuntu2.3) ...
Setting up libopengl0:amd64 (1.0.0-2ubuntu2.3) ...
Setting up libxcb-dri2-0:amd64 (1.13-2~ubuntu18.04) ...
Setting up libxcb-dri3-0:amd64 (1.13-2~ubuntu18.04) ...
Setting up libxcb-glx0:amd64 (1.13-2~ubuntu18.04) ...
Setting up libgles1:amd64 (1.0.0-2ubuntu2.3) ...
Setting up libxcb-randr0:amd64 (1.13-2~ubuntu18.04) ...
Setting up libxcb-xfixes0:amd64 (1.13-2~ubuntu18.04) ...
```

apt-get install nvidia-opencl-dev

创建链接

mkdir -p /etc/OpenCL/vendors/
cd /etc/OpenCL/vendors
ls

```
(myconda) root@0b1cde4730d9:/22# mkdir -p /etc/OpenCL/vendors/
(myconda) root@0b1cde4730d9:/22# cd /etc/OpenCL/vendors
(myconda) root@0b1cde4730d9:/etc/OpenCL/vendors# ls
```

vim nvidia.icd

在nvidia.icd填入以下链接

/usr/lib/x86_64-linux-gnu/libnvidia-opencl.so.1

```
root@6bc095abfbf0: /usr/lib   root@6bc095abfbf0: /etc/O
/usr/lib/x86_64-linux-gnu/libnvidia-opencl.so.1
~
~
~
~
~
~
~
~
~
~
~
```

验证释放正确链接

cat nvidia.icd
ll /usr/lib/x86_64-linux-gnu/libnvidia-opencl.so.1

```
(myconda) root@6bc095abfbf0:/etc/OpenCL/vendors# vim nvidia.icd
(myconda) root@6bc095abfbf0:/etc/OpenCL/vendors# cat nvidia.icd
/usr/lib/x86_64-linux-gnu/libnvidia-opencl.so.1
(myconda) root@6bc095abfbf0:/etc/OpenCL/vendors#
(myconda) root@6bc095abfbf0:/etc/OpenCL/vendors# ll /usr/lib/x86_64-linux-gnu/libnvidia-opencl.so.1
lrwxrwxrwx. 1 root root 26 Jul 30 14:30 /usr/lib/x86_64-linux-gnu/libnvidia-opencl.so.1 -> libnvidia-opencl.so.440.64*
(myconda) root@6bc095abfbf0:/etc/OpenCL/vendors#
```

测试opencl

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clGetPlatformIDs.c 内容

```
#include <stdio.h>
#include <CL/opencl.h>

int main(int argc, char **argv)
{
   int status;
   cl_uint n_platform;

   status = clGetPlatformIDs(0, NULL, &n_platform);

    if(status != CL_SUCCESS)
   {
   fprintf(stderr, "no platforms %d\n", status);
   return -1;
   } else
   {
   fprintf(stderr, "number of CL platforms %d\n", n_platform);
   return 0;
   }
}
```

进入解决，我这里的文件夹是22，大家按照自己习惯来即可

```
cd /22
ls
gcc clGetPlatformIDs.c -lOpenCL -o main
chmod +x main
./main
```

```
(myconda) root@6bc095abfbf0:/etc/OpenCL/vendors# cd /22
(myconda) root@6bc095abfbf0:/22# ls
clGetPlatformIDs.c
(myconda) root@6bc095abfbf0:/22#
(myconda) root@6bc095abfbf0:/22# gcc clGetPlatformIDs.c -lOpenCL -o main
(myconda) root@6bc095abfbf0:/22#
(myconda) root@6bc095abfbf0:/22# chmod +x main
(myconda) root@6bc095abfbf0:/22#
(myconda) root@6bc095abfbf0:/22# ./main
number of CL platforms 1
(myconda) root@6bc095abfbf0:/22#
```

出现number of CL platforms 1，安装及测试就完成了

参考文章

Install OpenCL on Ubuntu 14.04 and Nvidia

Ubuntu 18.10 with Nvidia 410: OpenCL not working anymore (clinfo: 0 platforms)

Opencl clGetPlatformIDs error -1001

OpenCL crashes on call to clGetPlatformIDs

ERROR: clGetPlatformIDs -1001 when running OpenCL code (Linux)