

GPU 主机环境配置

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主机IP: 192.168.1.230; 用户密码: root/123456; 操作系统: centos7

驱动安装

a) 在官网<http://www.nvidia.cn/Download/index.aspx?lang=cn> 选择对应显卡的驱动(我们主机显卡是**GeForce GTX 1080**)，直接下载，下载后的文件名: NVIDIA-Linux-x86_64-390.48.run

NVIDIA 驱动程序下载

选项 1: 手动查找适用于我的NVIDIA 产品的驱动程序。

[帮助](#)

产品类型: GeForce ▼

产品系列: GeForce 10 Series ▼

产品家族: GeForce GTX 1080 ▼

操作系统: Linux 64-bit ▼

语言: Chinese (Simplified) ▼

搜索

b) 安装编译环境

```
yum -y install gcc kernel-devel "kernel-devel-uname-r == $(uname -r)" dkms
```

c) 屏蔽默认带有的nouveau

在/lib/modprobe.d/dist-blacklist.conf文件增加如下两行

```
blacklist sha1-mb
options nouveau modeset=0
```

d) 修改运行级别为文本模式

```
systemctl set-default multi-user.target
```

e) 重启主机

```
reboot
```

f) 安装显卡驱动

```
./NVIDIA-Linux-x86_64-390.48.run --kernel-source-path=/usr/src/kernels/3.10.0-693.el7.x86_64/ -k $(uname -r) --dkms
```

cuda安装

a) 在官网<https://developer.nvidia.com/cuda-90-download-archive> 下载，选择相应操作系统。下载后文件名为：cuda_9.0.176_384.81_linux.run

Select Target Platform ⓘ

Click on the green buttons that describe your target platform. Only supported platforms will be shown.

Operating System	Windows	Linux	Mac OSX			
Architecture ⓘ	x86_64	ppc64le				
Distribution	Fedora	OpenSUSE	RHEL	CentOS	SLES	Ubuntu
Version	7	6				
Installer Type ⓘ	runfile (local)	rpm (local)	rpm (network)			

Before installing the CUDA Toolkit on Linux, please ensure that you have the latest NVIDIA driver R390 installed. The latest NVIDIA R390 driver is available at: www.nvidia.com/drivers

b) 如下命令安装

```
./cuda_9.0.176_384.81_linux.run --kernel-source-path='/usr/src/kernels/3.10.0-693.el7.x86_64'
```

c) 环境变量设置

修改/etc/bashrc文件增加如下：

```
PATH=$PATH:/usr/local/cuda-9.0/bin
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/usr/local/cuda-9.0/lib64
```

cuda安装

a) 官网<https://developer.nvidia.com/cudnn-download>下载, cuda对应的版本(注: 需要登陆, 注册一个账号即可); 下载后文件名: cudnn-9.0-linux-x64-v7.tgz



b) 安装, 解压即可, 这里安装到目录/usr/local/cudnn

```
mkdir /usr/local/cudnn
tar -xvf cudnn-9.0-linux-x64-v7.tgz -C /usr/local/cudnn
```

c) 复制文件

```
cd /usr/local/cudnn/cuda/include
cp *.h /usr/local/cuda/include/

cd /usr/local/cudnn/cuda/lib64
cp libcudnn* /usr/local/cuda/lib64/

chmod a+r /usr/local/cuda/include/cudnn.h /usr/local/cuda/lib64/libcudnn*
```

注: /usr/local/cuda 为cuda安装目录, /usr/local/cudnn为cudnn安装目录

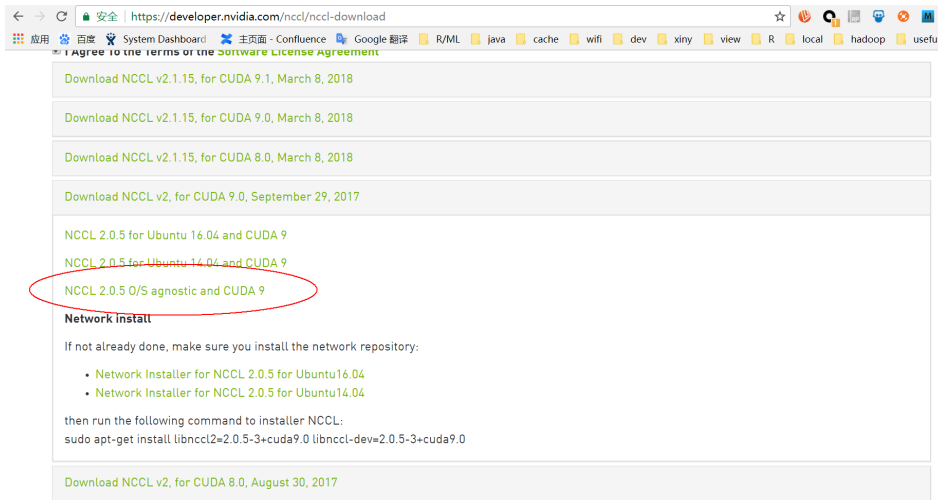
d) 软连接更新

```
cp /usr/local/cuda-9.0/lib64/libcudart.so.9.0 /usr/lib/libcudart.so.9.0
cp /usr/local/cuda-9.0/lib64/libcublas.so.9.0 /usr/lib/libcublas.so.9.0
cp /usr/local/cuda-9.0/lib64/libcurand.so.9.0 /usr/lib/libcurand.so.9.0
cp /usr/local/cuda/lib64/libcudnn.so.7 /usr/local/lib/libcudnn.so.7

ldconfig
```

nccl2安装

a) 在官网<https://developer.nvidia.com/nccl/nccl-download> 下载nccl2对应版本



b) 解压安装

```
tar -xvf nccl_2.0.5-3+cuda9.0_amd64.txz -C /usr/local/
```

c) 环境变量修改

修改/etc/bashrc, 增加/usr/local/nccl_2.0.5-3+cuda9.0_amd64/lib到LD_LIBRARY_PATH中

```
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/usr/local/cuda-9.0/lib64:/usr/local/cudnn  
/cuda/lib64:/usr/local/nccl_2.0.5-3+cuda9.0_amd64/lib
```

d) so文件复制

```
cp -rp /usr/local/nccl_2.0.5-3+cuda9.0_amd64/lib/libnccl* /usr/local/lib/  
cp -rp /usr/local/nccl_2.0.5-3+cuda9.0_amd64/include/nccl.h /usr/local  
/include/
```

conda环境

a) 下载, 从<https://mirrors.tuna.tsinghua.edu.cn/anaconda/archive/> 上下载

```
wget https://mirrors.tuna.tsinghua.edu.cn/anaconda/archive/Anaconda3-5.1.0-  
Linux-x86_64.sh
```

b) 安装

```
./Anaconda3-5.1.0-Linux-x86_64.sh
```

c) 镜像配置

```
conda config --add channels https://mirrors.tuna.tsinghua.edu.cn/anaconda  
/pkgs/free/  
conda config --add channels https://mirrors.tuna.tsinghua.edu.cn/anaconda  
/pkgs/main/  
conda config --set show_channel_urls yes
```