Caffe Install for Debian/Ubuntu

1. System Install(amd64)

2. Install Dependences

```
apt install gcc g++ make cmake cmake-curses-gui
apt install libprotobuf-dev libleveldb-dev libsnappy-dev libopencv-dev libhdf5-serial-dev protobuf-compiler libgflags-dev libgoogle-glog-dev liblmdb-dev
apt install --no-install-recommends libboost-all-dev
apt install libatlas-base-dev
apt install python-dev python-skimage python-protobuf python-opencv
```

3. Install nvidia driver

- 3.1 ***dependences***

  ```
  apt install dkms build-essential linux-headers-amd64(or linux-headers-$(uname -r))
  dpkg --add-architecture i386
  apt install lib32z1 lib32ncurses5
  ```

- 3.2 ***disable nouveau module(optional)***

- vim /etc/modprobe.d/blacklist-nouveau.conf

```
blacklist nouveau
blacklist lbm-nouveau
options nouveau modeset=0
alias nouveau off
alias lbm-nouveau off
```

- disable module

```
echo options nouveau modeset=0 | sudo tee -a /etc/modprobe.d/nouveau-kms.conf
update-initramfs -u
```

- 3.3 ***execute installer***

```
service lightdm stop / service gdm3 stop
sh NVIDIA-Linux-x86_64-XX.run
```

4. Install cuda/cudnn

```
sh cuda_XX.run
echo "/usr/local/cuda/lib64">>/etc/ld.so.conf.d/libcuda.conf
ldconfig
```

5. Compile Caffe

Issues

- *cuda install*

1. Can't locate InstallUtils.pm in @INC

  ```
  export PERL5LIB=.
  ```

- *compile caffe*

2. Can't find hdf5

  ```
  add path "/usr/include/hdf5/serial/","/usr/lib/x86_64-linux-gnu/hdf5/serial/" in Makefile.config
  ```

3. undefined reference to 'H5LTget_dataset_ndims'xx

  ```
  vim cmake/Dependencies.cmake to append ${HDF5_HL_LIBRARIES}
  ```

4. ***gcc/g++ version conflict***

- such as undefined reference to `google::base::CheckOpMessageBuilder::NewStringabi:cxx11'

```
## compile glog manually
apt purge libgoogle-glog-dev libgoogle-glog0v5
apt source libgoogle-glog-dev
cd google-glog-0.3.4
./configure

vim Makefile
#change line 613 to ACLOCAL=aclocal-1.15
#change line 619 to AUTOMAKE=automake-1.15
```

```
make
automake --add-missing
make -j 16
make install
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