Installation and Use of Jtop

Installation of Jtop

(1) Installing JTOP to check CPU usage

```
    sudo apt-get update
    sudo apt-get full-upgrade
    sudo apt install curl
    sudo apt install nano
    curl https://bootstrap.pypa.io/get-pip.py -o get-pip.py #下载安装脚本
    sudo python3 get-pip.py # 运行安装脚本
    sudo pip3 install jetson-stats
    jtop
```

Check the installed system components

(1) The OS image of Jetson nano already comes with JetPack, cuda, cudnn, opencv, and other installed examples. The installation path for these examples is as follows

```
TensorRT /usr/src/tensorrt/samples/
CUDA /usr/local/cuda-10.2/samples/
cuDNN /usr/src/cudnn_samples_v8/
VisionWorks /usr/share/visionworks/sources/samples/
/usr/share/visionworks-tracking/sources/samples/
/usr/share/visionworks-sfm/sources/samples/

OpenCV /usr/share/opencv4/samples/
```

(2) Check CUDA

The CUDA10.2 version has already been installed in Jetson ano, but at this time, if you run nvcc -V, it will not succeed. You need to write the path of CUDA to the environment variable. The Vim tool comes with the OS, so run the following command to edit the environment variables

Firstly, check if there is nvcc in the bin directory of cuda:

```
ls /usr/local/cuda/bin
```

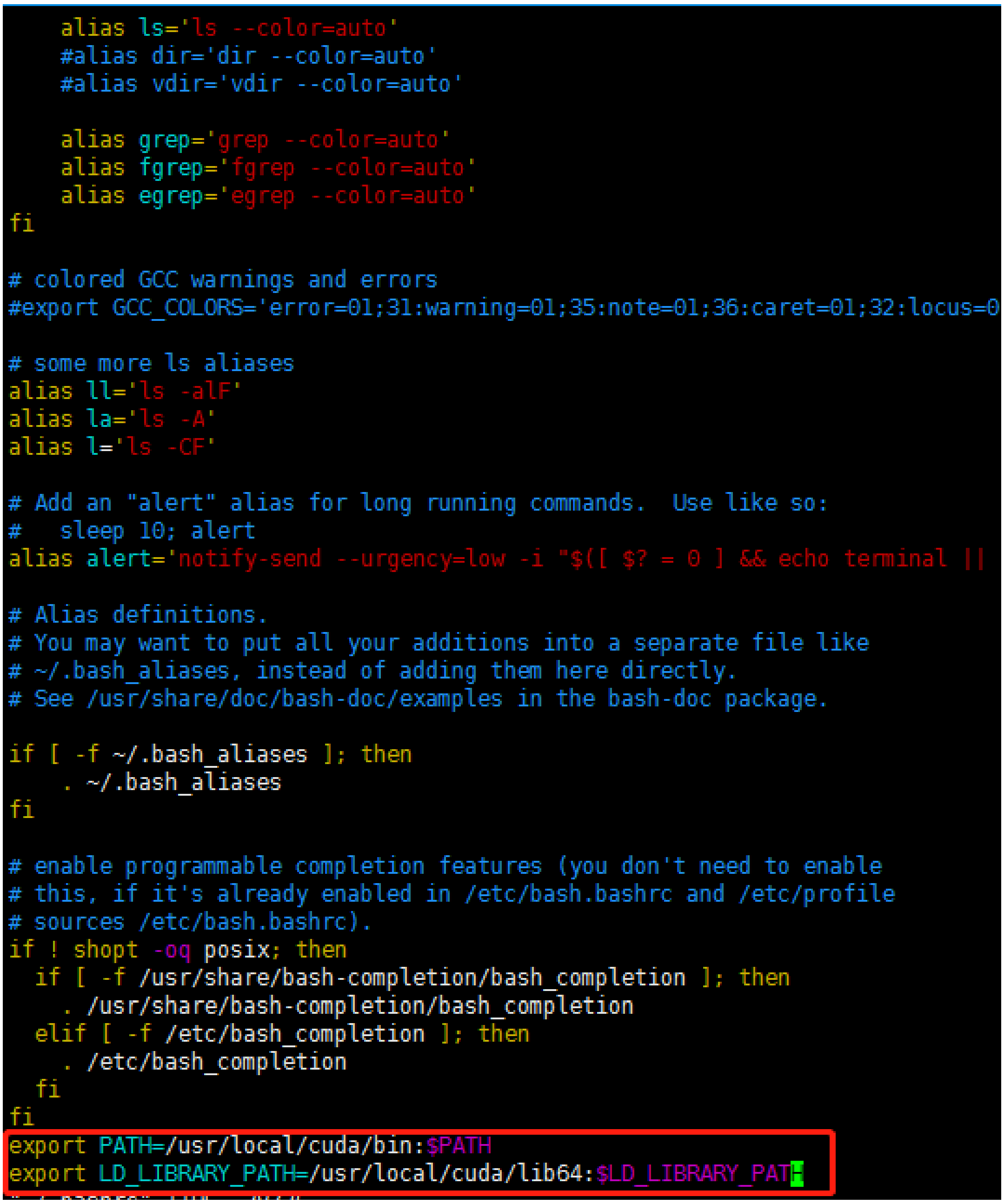
If present,

```
sudo vim ~/.bashrc进入配置文件； 在最后面添加以下两行：
```

Note: In vim, use Esc to return to command mode, and switch to the input module through I to enter text in input mode

```
export PATH=/usr/local/cuda/bin:$PATH

export LD_LIBRARY_PATH=/usr/local/cuda/lib64:$LD_LIBRARY_PATH
```



```
    alias ls='ls --color=auto'
    #alias dir='dir --color=auto'
    #alias vdir='vdir --color=auto'

    alias grep='grep --color=auto'
    alias fgrep='fgrep --color=auto'
    alias egrep='egrep --color=auto'
fi

# colored GCC warnings and errors
#export GCC_COLORS='error=01;31:warning=01;35:note=01;36:caret=01;32:locus=0

# some more ls aliases
alias ll='ls -alF'
alias la='ls -A'
alias l='ls -CF'

# Add an "alert" alias for long running commands.  Use like so:
#   sleep 10; alert
alias alert='notify-send --urgency=low -i "$([ $? = 0 ] && echo terminal ||

# Alias definitions.
# You may want to put all your additions into a separate file like
# ~/.bash_aliases, instead of adding them here directly.
# See /usr/share/doc/bash-doc/examples in the bash-doc package.

if [ -f ~/.bash_aliases ]; then
    . ~/.bash_aliases
fi

# enable programmable completion features (you don't need to enable
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
if ! shopt -oq posix; then
  if [ -f /usr/share/bash-completion/bash_completion ]; then
    . /usr/share/bash-completion/bash_completion
  elif [ -f /etc/bash_completion ]; then
    . /etc/bash_completion
  fi
fi
export PATH=/usr/local/cuda/bin:$PATH
export LD_LIBRARY_PATH=/usr/local/cuda/lib64:$LD_LIBRARY_PATH
```

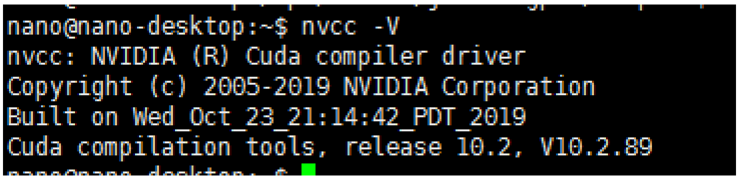
Note: After exiting the command mode through Esc, press: to start inputting commands, wq to save and exit, q to exit, q! For forced exitSave to exit.

Then it needs to take effect under the source.

```
source ~/.bashrc
```

After the source, execute nvcc - V again at this time, and the result is as follows

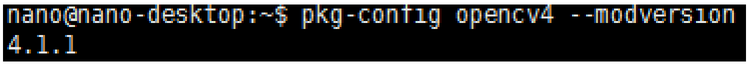
beckhans@Jetson:~$ nvcc -V



```
nano@nano-desktop:~$ nvcc -V
nvcc: NVIDIA (R) Cuda compiler driver
Copyright (c) 2005-2019 NVIDIA Corporation
Built on Wed_Oct_23_21:14:42_PDT_2019
Cuda compilation tools, release 10.2, V10.2.89
nano@nano-desktop:~$
```

(3) Check OpenCV

OpenCV4.1.1 version is already installed in Jetson nano. You can use the command to check if OpenCV is installed properlypkg-config opencv4 --modversionIf OpenCv is installed properly, the version number will be displayed, and my version is 4.4.1

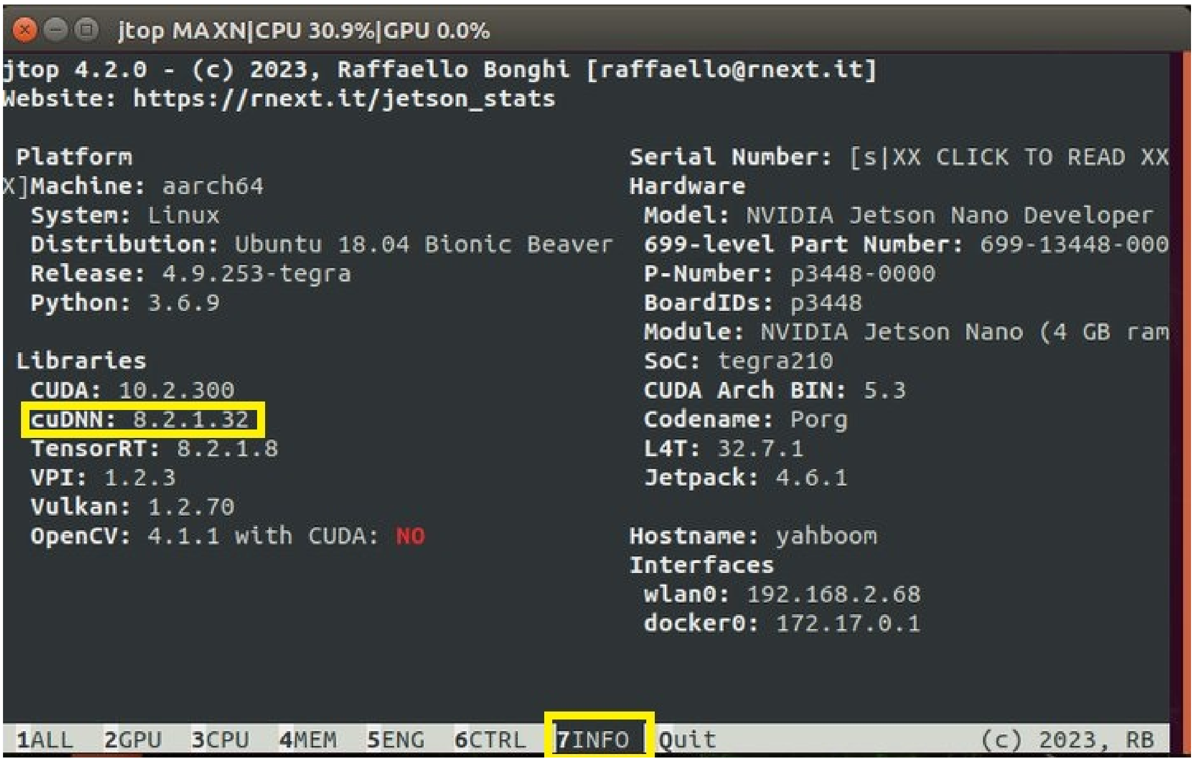


```
nano@nano-desktop:~$ pkg-config opencv4 --modversion
4.1.1
```

(4) Check cuDNN

CuDNN has been installed in Jetson nano and there are examples available for operation. Let's run the examples to verify the CUDA above

Enter jtop at the terminal, press the right arrow key on the keyboard to select 7info, and you can see the version of cuDNN, as shown in the following figure:



```
jtop 4.2.0 - (c) 2023, Raffaello Bonghi [raffaello@rnext.it]
Website: https://rnext.it/jetson_stats

 Platform                                    Serial Number: [s|XX CLICK TO READ XX
X]Machine: aarch64                           Hardware
  System: Linux                               Model: NVIDIA Jetson Nano Developer
  Distribution: Ubuntu 18.04 Bionic Beaver    699-level Part Number: 699-13448-000
  Release: 4.9.253-tegra                      P-Number: p3448-0000
  Python: 3.6.9                               BoardIDs: p3448
                                              Module: NVIDIA Jetson Nano (4 GB ram
 Libraries                                    SoC: tegra210
  CUDA: 10.2.300                              CUDA Arch BIN: 5.3
  cuDNN: 8.2.1.32                             Codename: Porg
  TensorRT: 8.2.1.8                           L4T: 32.7.1
  VPI: 1.2.3                                  Jetpack: 4.6.1
  Vulkan: 1.2.70
  OpenCV: 4.1.1 with CUDA: NO                Hostname: yahboom
                                             Interfaces
                                              wlan0: 192.168.2.68
                                              docker0: 172.17.0.1


 1ALL  2GPU  3CPU  4MEM  5ENG  6CTRL  7INFO Quit                    (c) 2023, RB
```