Linux and RPi notes

李鹏飞

2020-01-01

pengfei.li2017@outlook.com

目录

插图

表格

1　Linux/Elementary OS 在 Nvidia 安装之后的急救

1. 安装完 Nvidia 显卡 driver 之后发现，系统无法正常启动，且在一个 command window 下反复循环。

2. google 寻找了相关措施，也不能够解决问题。

3. ctr alt F1 反复按压也结局不了问题。

4. F12 is for booting bios for my Huawei Laptop.

5. 胡乱按了一些 F1 键盘，终于进入 console，执行 sudo apt-get purge nvidia*

20200625, second time, I am trying to install nvidia driver, this time, I got the same infinite loop problem. never ever try sudo apt install nvidia-340 again, this is a pretty older driver, it does not support my huawei nvidia driver. Faulty behaviors and solutions are listed below:

1. run nvidia-smi command, this is a command normally for checking if the driver is installed correctly or not.

2. system reminds you to install these two packages, nvidia-340 and nvidia-utils-390, then I did run sudo apt install nvidia-340, and then it stuck.

3. try to follow the aforementioned tips by keeping pressing the F1 key, it doesn't work.

4. Esc helps gets into Debian window, also called grub mode, like recovery mode in windows? Try to google Ubuntu RecoveryMode, it shows detailed instruction to booting into recovery mode.

5. Esc key is the critical button to get into recovery mode. However, we have to check what is this UEFI, because for BIOS, you enter grub mode by pressing shift key.

6. `https://itsfoss.com/check-uefi-or-bios/`, here it gives a clear explanation of UEFI and BIOS mode.

7. After you entered the grub mode, then select an option to enter into the pure console mode, and purge all nvidia setup.

2　Linux common commands

2.1　Notes on 20200101

2.1.1　check ip addresses of all users in local subnet

sudo nmap -sn 192.168.0.0/24

results:

Starting Nmap 7.60 (https://nmap.org) at 2020-01-01 17:14 CST

Nmap scan report for __ gateway (192.168.0.1)

Host is up (0.0043s latency).

MAC Address: C8:3A:35:2B:6C:38 (Tenda Technology)

Nmap scan report for 192.168.0.100

Host is up (0.0040s latency).

MAC Address: 94:9F:3E:C3:E1:BD (Sonos)

Nmap scan report for 192.168.0.101 Host is up (0.19s latency).

MAC Address: 9C:2E:A1:2E:D8:84 (Unknown)

Nmap scan report for 192.168.0.103

Host is up (-0.053s latency).

MAC Address: F4:63:1F:F6:66:43 (Unknown)

Nmap scan report for 192.168.0.108

Host is up (0.076s latency).

MAC Address: BC:83:85:C7:27:73 (Microsoft)

Nmap scan report for 192.168.0.109

Host is up (0.076s latency).

MAC Address: B8:27:EB:26:81:1F (Raspberry Pi Foundation)

Nmap scan report for 192.168.0.110

Host is up (0.076s latency).

MAC Address: A0:51:0B:87:5E:C4 (Unknown)

Nmap scan report for pengfei-KLV-WX9 (192.168.0.107)

Host is up.

Nmap done: 256 IP addresses (8 hosts up) scanned in 4.61 seconds

2.2 Linux remote desktop windows10 home edition

windows10 home edition 不允许 remote desktop，虽然系统有这个选项询问你是否允许 remote desktop，但是在另一个地方又告诉你 home edition 是没有这个功能的。以下是解决方案：

1. 使用 TightVNC：网址：`https://www.tightvnc.com/download.php` 在 windows10 直接安装 TightVNC，一路安装不用改任何东西，安装完毕。设置 require authentication，设置密码。 TightVNC 的一些问题：

   (a) VNC 有些时候不稳定，需要重启系统，有可能是 VPN 的问题。

   (b) VNC 用 laptop 的 touch pad 右键不好使，只能用鼠标。

2. 使用 RDPwrapper 在 github 下又下载： 不推荐这个使用方法，CSDN 上很多人反映不可用，而且下载的时候 chrome 会报错。另外还有修改注册表的，不推荐使用。

3. 在 linux 系统下安装 remmina： sudo apt-get install remmina remmina-plugin-* 注意尽量需找 apt-get 支持的语句，snap 和 dnf 都不好用，估计是支持其他 linux distro 的。

2.3 Windows10 remote linux

需要注意的是我的 raspberryPi 直接允许 VNC 即可，直接通过正常的 windows remote desktop 即可远程登录。但是 elementory os 不具有这个功能，于是需要安装。

1. 在 linux 上直接安装 xrpd：sudo apt-get install xrdp。

2. 直接登录，出现内部错误：这个是由于 VPN 的作用，关掉在开启即可。

3. 登录之后发现闪退：这是由于 linux 没有安装 xfce4。

   sudo apt-get install xfce4。

   百度搜索，通过 windows RDP 连接 Linux。

   如果这时候出现所说的 Ubuntu 安中装的 xrdp，桌面共享设置为允许，虚拟机设置的是桥接，虚拟机内外可以互相 ping 通；在 Windows 下用 mstsc 连接 Ubuntu 桌面，跳出账号密码页面，登录后自动退出（闪退）的解决方法：sudo apt-get install xfce4 echo xfce4-session > ~/.xsession touch .session sudo vim /etc/xrdp/startwm.sh 在. /etc/X11/Xsession 前面加 xfce4-session 然后重启 sudo service xrdp restart。

2.4 查找文档命令 find

find + [target directory] + [options] + [file or folder name]:

1. target directory: Period (.): Specifies the current and all nested folders. Forward Slash (/): Specifies the entire filesystem. Tilde (~): Specifies the active user's home directory.

2. options: -name or -atime n

3. file or folder name: * start sign represents wild card.

4. one example: find . -name *.tex

5. another example: find /home -name wsgi.py

6. reference: `https://www.lifewire.com/uses-of-linux-command-find-2201100`

2.5 Copy file

The best way I found so far is to use: sftp pi@192.168.0.109, then using the same login password as in: ssh pi@192.168.0.109. Some common commands are listed below:

1. ls: ls list the remote directory. lls is for the local.

2. pwd: present working directory. lpwd: local present working directory.

3. get: copy a file into the current local working directory.

3　Linux Screen APP 用法

Screen 是一个非常重要的 APP，可以在 Session/Terminal 关闭的时候，仍然在后台运行，相当于我以前使用的命令：*nohup python3 xx.py &*

3.1　键盘命令 (直接 prcess 键盘) ctl A + key 系列

例如：ctr A + k，是 kill 当前的命令。具体如下：

1. ctr A + k: kill the current screen.

2. ctr A + ?: help window for ctr A commands.

3. ctr A + [or escapekey: start copy mode, you can use arrow key to move up and down, if you press enter key, they you are selecting something for copy. If you don't want any copy, press escape key again.

4. ctr A +]: paste the selected things.

5. reference: google scroll inside screen or pause output.

3.2　Console 命令（在 console 当中输入）screen -[key]

例如：screen -ls:list all screens active. 具体如下：

1. screen -list: = screen -ls

2. screen -S screenname: create a screen with a name "screenname"

3. screen: create a screen without a specified name, but the system will automatically assign a name to the screen.

4. screen -d screenid/screenname: detach a screen locally or remotely. If you have a session running locally, you have to start a new terminal somewhere else to detach it.

5. screen -r screenid/screenname: reattach a screen.

6. reference: google 15 linux screen command for dealing terminal sessions.

4　Linux VPN 用法

[**?**] 本文具体采用西游 VPN `xiyou360.net`.

1. 下载并解压 Ciso AnyConnect

2. 解压文档

3. cd 到指定文件夹，执行 cd vpn

4. 执行 sudo .\vpn_install.sh

5   Linux firewall iptables

see the reference :

https://www.howtogeek.com/177621/the-beginners-guide-to-iptables-the-linux-firewall/

6   Raspberry Pi: Pi Model 3B+ V1.3

6.1   Check hostname and other information

hostnamectl:

Static hostname: pengfei-KLV-WX9

Icon name: computer-laptop

Chassis: laptop

Machine ID: 82aadb731d60458194911154ce5fef65

Boot ID: 4405f29ae34248918f4b9b3b6d387a8b

Operating System: elementary OS 5.0 Juno

Kernel: Linux 4.15.0-70-generic

Architecture: x86-64

whoami: this command is to check my username.

6.2   Login to pi with ssh

Using command: ssh pi@IPAddress, here pi is your user name, you can check ipaddress with command, *hostname -I*. ssh is in small case.

6.3   Functions and commands

1. check Raspberry Pi information: *pinout*

6.4   Transfer file to and from pi (or Linux system)

Detailed information can be referenced to https://www.raspberrypi.org/documentation/remote-access/. 具体来说有一下几种形式：

1. Between Linux and Windows: SFTP，SSH File Transfer Protocal. 本质来说人然是 SSH 服务，Linux 系统需要开启 SSH 服务。Windows 系统安装 WinSCP。

2. Between Linux and Linux: 同上 SFTP，不过这时候推荐 FileZilla.

3. Between Linux and Linux: 除了上述 SFTP 之外，还可以使用 SCP，Secure Copy 来使用。比如：scp myfile.txt pi@192.168.0.100：（这里是 destination directory, 该语句代表 /home/pi，如果是其他 directory，只需要在：后边加上制定的 directory 即可。）Copying from remote directory to local directory: scp pi@192.168.0.100：myfile.txt.

6.5 RPI 搭配 Django 网站框架问题及解决方案

1. *Importing the numpy c-extensions failed. and Original error was: libf77blas.so.3: cannot open shared object file: No such file or directory.* 错误解决方案：sudo apt-get install libatlas-base-dev 。原因很可能是 RPI 系统中缺少 libff77blas.so.3 的系统文件，我是通过 google 得出的这个解决方案。

7　Git file management

7.1　将 Local folder push 到 git repo

一般来说，git repo 在网站上直接创建，然后在 local directory 当中使用 git clone 命令进行下载，如果不存在 git cloud 端的 directory 怎么办呢？

参照：

```
https://help.github.com/en/github/importing-your-projects-to-github/
adding-an-existing-project-to-github-using-the-command-line
```

1. Create a new repository. 这一步是必须的，如果 git 网站没有这个 repository，push 会出现各种错误。

2. Locally git init.

3. git add . and git commit

4. git remote add origin remote (repo URL, this URL can be SSH or HTTP, SSH will be better, it won't ask your credentials everytime.)

5. git push -u origin master. (This -u option must be there, otherwise, git pull will ask you which branch you want to merge with.)

8   vscode IDE 的一些用法

Technically, vs code is not an IDE, integrated development environment, it is an editor just like notepad but with many extensions. Figure 1 shows how to integrate shell into vscode.
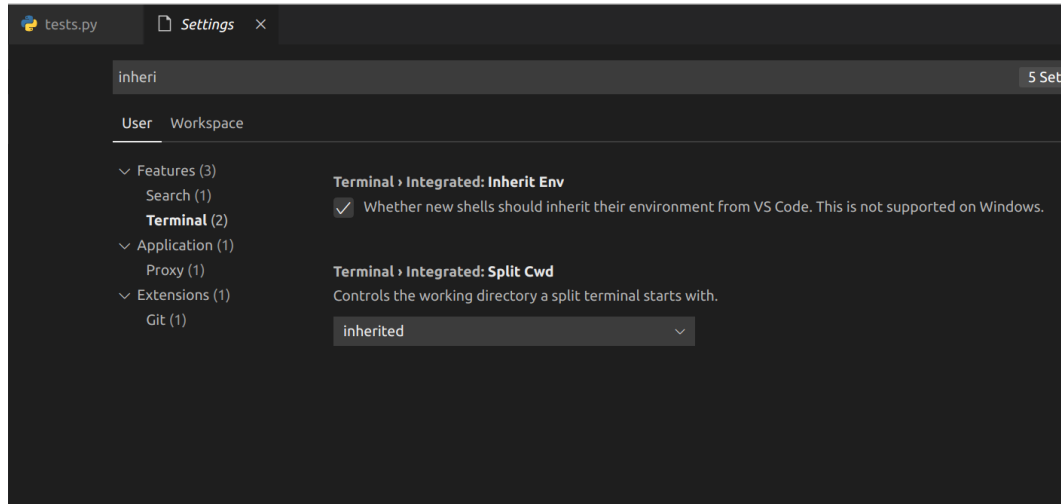

图 1: integrated shell

8.1   vscode upgrade

9   Update modules like vscode

To update a module, e.g. vscode, you can directly use sudo apt-get, as shown in Figure2.

图 2: Update Vscode

10   第二个 Section

10.1   接下来要做的事情

1. plot to a digital buffer for Django app, so that you don't have to save a figure and load it. This can potentially solve the problem of concurrency, which means multiple users can access the app at the same time, and generate the image at the same time, but load it at different times, these two users can get an image that is created by the other one.

2. Pyinstaller has upgraded to a new version, I should try it.

11 第三个 Section

12 文献

参考文献