创建基于AutoDL的GPU环境

配置环境——激活conda

```
*注意:
1.系统盘较小请将大的数据存放于数据盘或网盘中，重置系统时数据盘和网盘中的数据不受影响
2.清理系统盘请参考：https://www.autodl.com/docs/qa/
root@container-58c811ac3c-8a409067:~# conda activate base

CommandNotFoundError: Your shell has not been properly configured to use 'conda activate'.
To initialize your shell, run

    $ conda init <SHELL_NAME>

Currently supported shells are:
  - bash
  - fish
  - tcsh
  - xonsh
  - zsh
  - powershell

See 'conda init --help' for more information and options.

IMPORTANT: You may need to close and restart your shell after running 'conda init'.
```

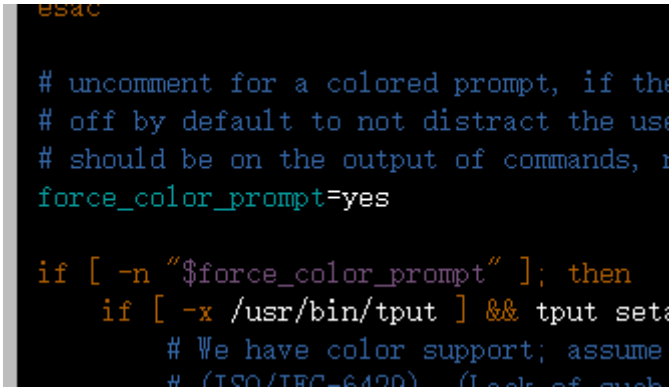
1. 输入：`vim ~/.bashrc`
2. 在最后加上：`source /root/miniconda3/etc/profile.d/conda.sh`

```
#fi
source /etc/profile
source /etc/autodl-motd
source /root/miniconda3/etc/profile.d/conda.sh
```

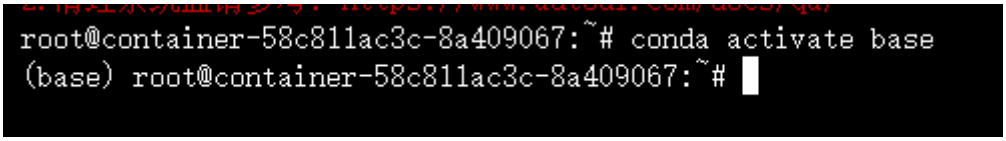
3. 设置高亮，找到：#force_color_prompt=yes

```
esac

# uncomment for a colored prompt, if the terminal has the capability; turned
# off by default to not distract the user: the focus in a terminal window
# should be on the output of commands, not on the prompt
#force_color_prompt=yes

if [ -n "$force_color_prompt" ]; then
    if [ -x /usr/bin/tput ] && tput setaf 1 >&/dev/null; then
        # We have color support; assume it's compliant with Ecma-48
        # (ISO/IEC-6429). (Lack of such support is extremely rare, and such
        # a case would tend to support setf rather than setaf.)
        color_prompt=yes
    else
        color_prompt=
    fi
```

删去#



4. 重启终端，或者刷新（输入：`bash`）



5. 进入环境：`conda activate base`
6. 创建新环境：`conda create -n py38 python=3.8`
7. 进入新环境，输入：`conda activate py38`

根据不同框架和GPU的操作

下载pytorch地址： Previous PyTorch Versions | PyTorch

miniconda3框架+3090

1. 安装pytorch，输入：`conda install pytorch torchvision torchaudio cudatoolkit=11.3 -c pytorch`
2. 安装其他包，输入：`pip install jupyter d2l`

miniconda3框架+2080ti

1. 安装pytorch，输入：`conda install pytorch==1.7.0 torchvision==0.8.0 torchaudio==0.7.0 cudatoolkit=10.1 -c pytorch`
2. 安装其他包，输入：`pip install jupyter d2l`

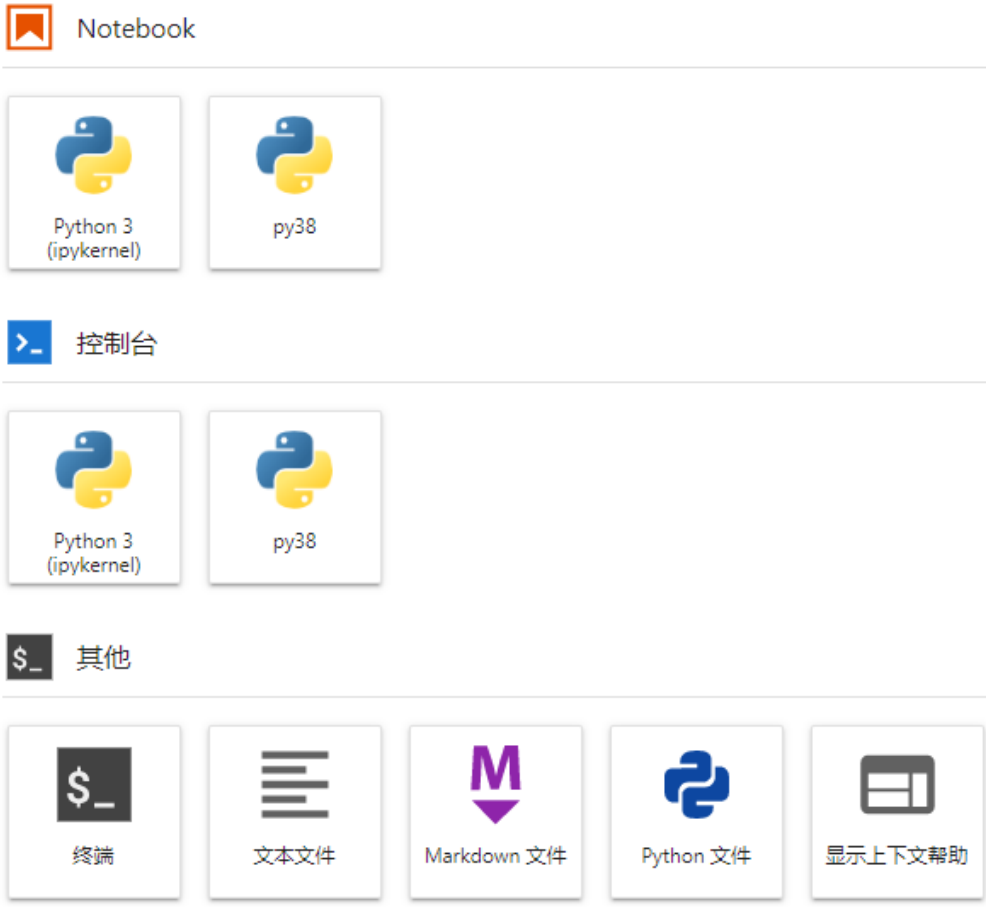
pytorch框架+2080ti

（base自带pytorch，但是最好用自己创建的py38）

1. 安装pytorch，输入：`conda install pytorch==1.7.0 torchvision==0.8.0 torchaudio==0.7.0 cudatoolkit=11.0 -c pytorch`
2. 安装其他包，输入：`pip install jupyter d2l`

jupyter页面更新

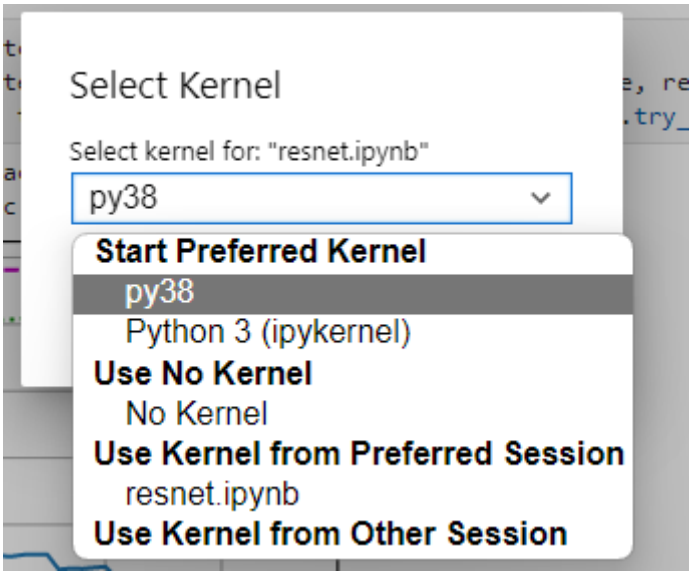
1. 在py38环境中，输入：`conda install ipykernel`
2. 输入：`ipython kernel install --user --name=py38`


Notebook
Python 3 (ipykernel)
py38
控制台
Python 3 (ipykernel)
py38
其他
终端
文本文件
Markdown 文件
Python 文件
显示上下文帮助

xftp上传文件

测试用例

使用py38内核



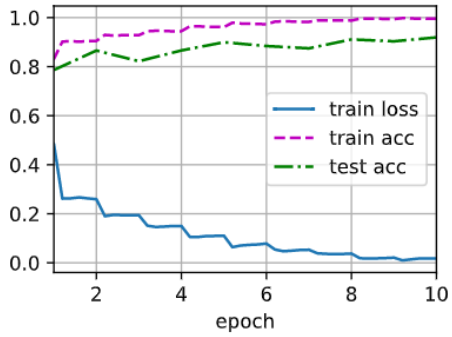
成功

[训练模型]

同之前一样，我们在Fashion-MNIST数据集上训练ResNet。

In [9]:
```
lr, num_epochs, batch_size = 0.05, 10, 256
train_iter, test_iter = d21.load_data_fashion_mnist(batch_size, resize=96)
d21.train_ch6(net, train_iter, test_iter, num_epochs, lr, d21.try_gpu())
```

```
loss 0.018, train acc 0.995, test acc 0.919
2185.7 examples/sec on cuda:0
```

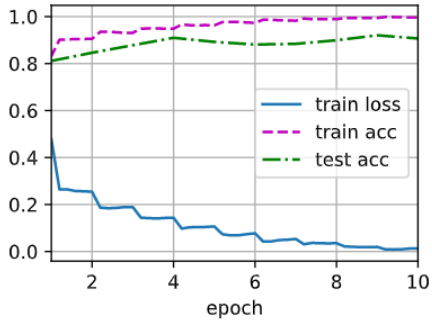


[训练模型]

同之前一样，我们在Fashion-MNIST数据集上训练ResNet。

```
[9]: lr, num_epochs, batch_size = 0.05, 10, 256
train_iter, test_iter = d2l.load_data_fashion_mnist(batch_size, resize=96)
d2l.train_ch6(net, train_iter, test_iter, num_epochs, lr, d2l.try_gpu())
```

```
loss 0.013, train acc 0.996, test acc 0.907
3244.1 examples/sec on cuda:0
```

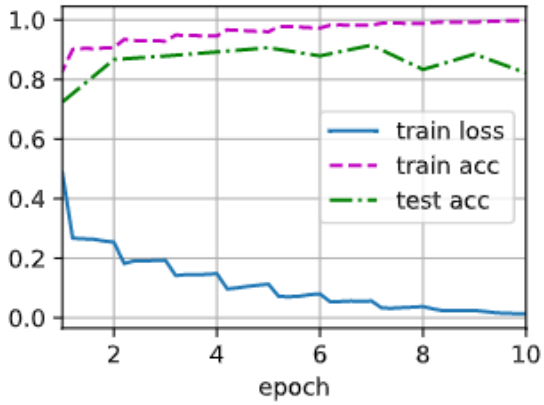


小结

同之前一样，我们在Fashion-MNIST数据集上训练ResNet。


```
[9]: lr, num_epochs, batch_size = 0.05, 10, 256
train_iter, test_iter = d2l.load_data_fashion_mnist(batch_size, resize=96)
d2l.train_ch6(net, train_iter, test_iter, num_epochs, lr, d2l.try_gpu())
```


```
loss 0.014, train acc 0.996, test acc 0.822
6457.6 examples/sec on cuda:0
```



安装Anaconda

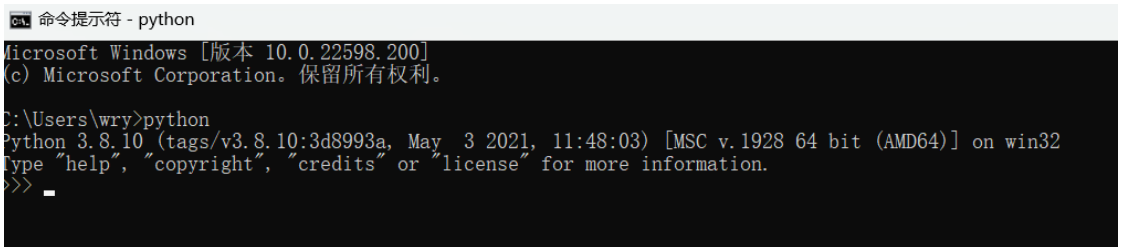
anaconda使用配置说明 （只做参考）

安装Anaconda

（Index of /anaconda/archive/ | 清华大学开源软件镜像站 | Tsinghua Open Source Mirror）

1. 下载最新版的Anaconda（对python可以向下兼容），点击安装

2. 选择加入path，不选择register anaconda as my default（这样Anaconda用的python和系统无关）

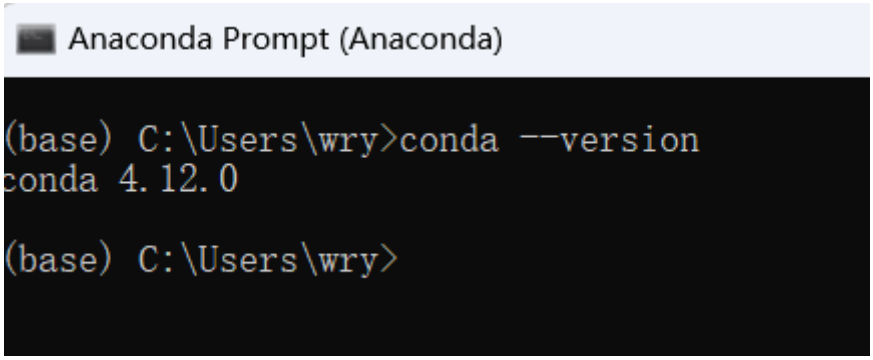


配置Anaconda

1. 开始 -> anaconda navigator可以成功启动，表明安装成功。

   开始 -> 右键点击anaconda prompt，以管理员身份运行。输入`conda list`，可以查看已经安装的包名和版本号。若结果正常显示，表明安装成功。

2. 点击进入Anaconda Prompt (Anaconda)。
3. 输入`conda --version`，检测conda环境。



4. 输入`conda info`，查看是否成功。

```
(base) C:\Users\wry>conda info

     active environment : base
    active env location : D:\Anaconda
            shell level : 1
       user config file : C:\Users\wry\.condarc
 populated config files : C:\Users\wry\.condarc
          conda version : 4.12.0
    conda-build version : 3.21.8
         python version : 3.9.12.final.0
       virtual packages : __cuda=11.1=0
                          __win=0=0
                          __archspec=1=x86_64
       base environment : D:\Anaconda  (writable)
      conda av data dir : D:\Anaconda\etc\conda
  conda av metadata url : None
          channel URLs : https://repo.anaconda.com/pkgs/main/win-64
                         https://repo.anaconda.com/pkgs/main/noarch
                         https://repo.anaconda.com/pkgs/r/win-64
                         https://repo.anaconda.com/pkgs/r/noarch
                         https://repo.anaconda.com/pkgs/msys2/win-64
                         https://repo.anaconda.com/pkgs/msys2/noarch
         package cache : D:\Anaconda\pkgs
                         C:\Users\wry\.conda\pkgs
                         C:\Users\wry\AppData\Local\conda\conda\pkgs
       envs directories : D:\Anaconda\envs
                         C:\Users\wry\.conda\envs
```

5. 输入`conda update conda`，更新conda包（国内网络即可）。
6. 输入`conda update --all`，更新所有包（国内网络即可）。

构建环境

1. 点击进入Anaconda Prompt (Anaconda)。
2. 输入 `conda create -n iec_wry python=3.6.5`，创建基于python3.6.5版本的环境
3. 输入 `conda env list`，查看环境列表（环境项目在 *D:\Anaconda\envs* 下）

```
(base) C:\Users\wry>conda env list
# conda environments:
#
base                  *  D:\Anaconda
iec_wry                  D:\Anaconda\envs\iec_wry
```

4. 输入 `conda activate iec_wry`，激活环境

Note：

1. 如果要删除环境，输入 `conda remove -n iec_wry --all`
2. 如果要查找环境下的包，在当前环境下输入 `conda list`
3. 如果要安装包，`conda install package_name[=x.x.x]` 或者 `pip install package_name[=x.x.x]`
4. 如果要更新包，`conda update package_name` 或者 `pip update package_name`
5. 如果要卸载包，`conda uninstall package_name` 或者 `pip uninstall package_name`

其他问题

1. python环境没有激活

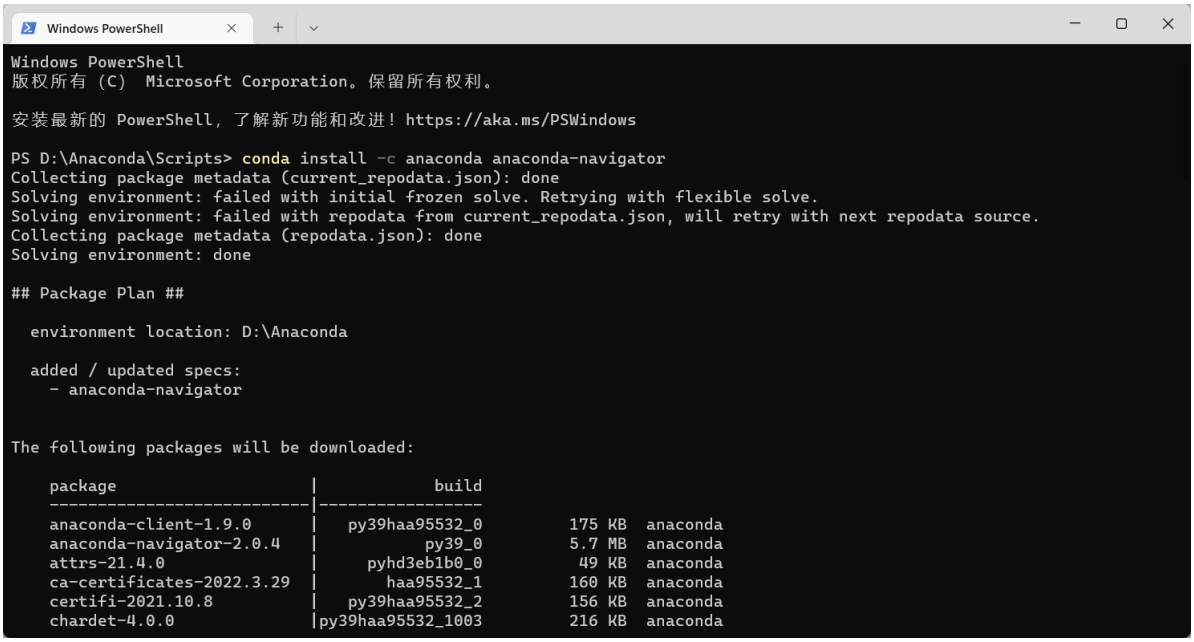
```
C:\Users\wry>python
Python 3.9.12 (main, Apr  4 2022, 05:22:27) [MSC v.1916 64 bit (AMD64)] :: Anaconda, Inc. on win32

Warning:
This Python interpreter is in a conda environment, but the environment has
not been activated.  Libraries may fail to load.  To activate this environment
please see https://conda.io/activation

Type "help", "copyright", "credits" or "license" for more information.
>>>
```

解决（必须在base环境下才能使用此python）

```
C:\WINDOWS\system32\cmd.exe - python
Microsoft Windows [版本 10.0.22598.200]
(c) Microsoft Corporation。保留所有权利。

C:\Users\wry>conda info --envs
# conda environments:
#
base                  *  D:\Anaconda


C:\Users\wry>conda activate D:\Anaconda

(base) C:\Users\wry>python
Python 3.9.12 (main, Apr  4 2022, 05:22:27) [MSC v.1916 64 bit (AMD64)] :: Anaconda, Inc. on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

2. 没有Anaconda Navigator

解决：开始菜单中找不到anaconda navigator的解决办法



安装Ubuntu

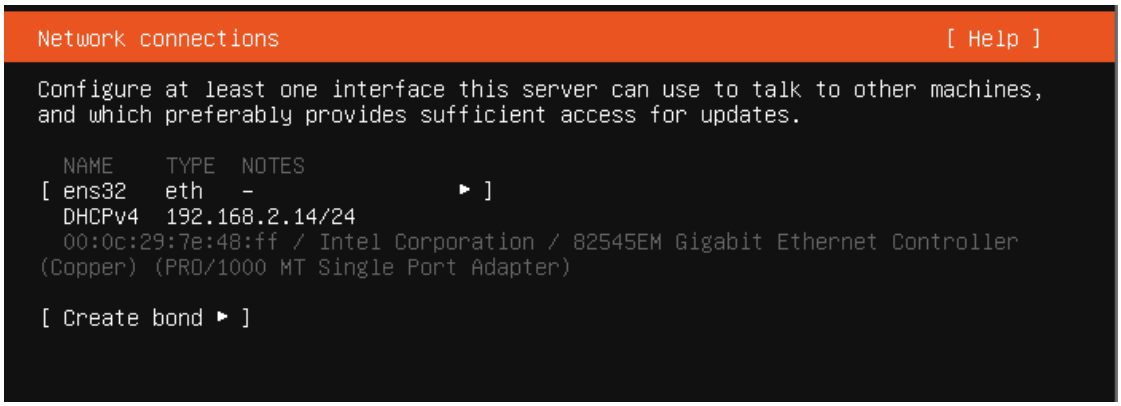
1. 安装Ubuntu Serve

（Ubuntu 18.04 LTS Server 版安装图文教程）

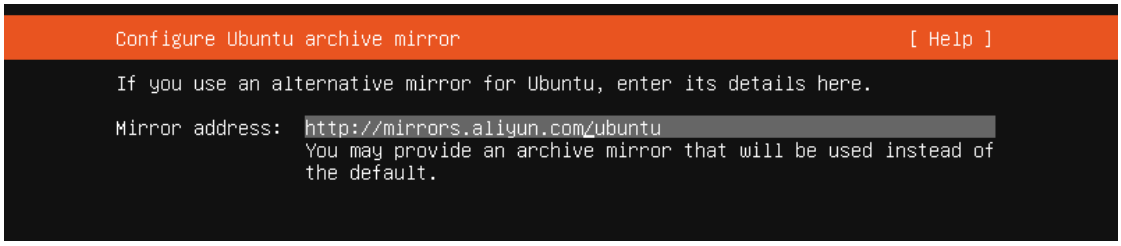
注意：使用桥接模式-Realtek PCIe网卡

2. 配置Ubuntu

1. 获取网络信息：192.168.2.14/24（但是端口依然是22）



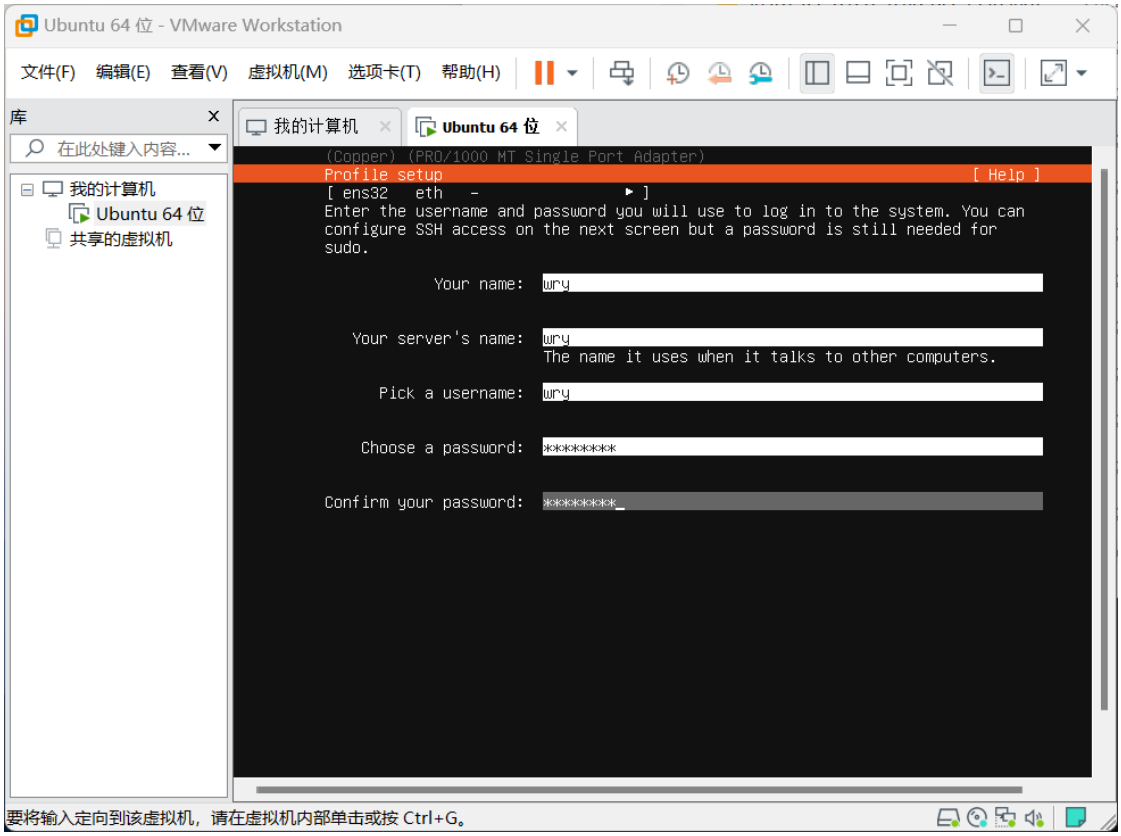
2. 配置镜像源：`http://mirrors.aliyun.com/ubuntu`



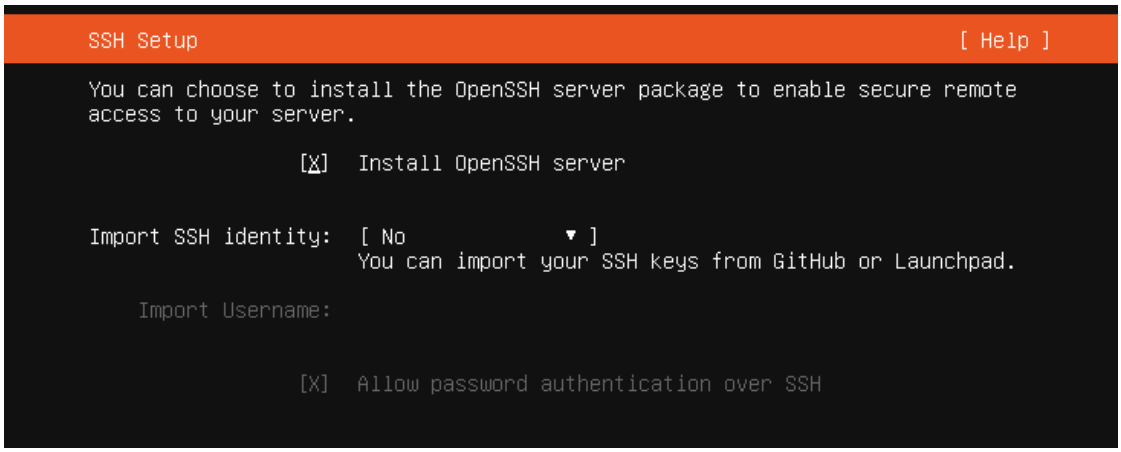
3. 点击upgrade
4. 配置用户信息

   用户名：wry

   密码：admin123



5. 勾选openssh



3. 配置ssh环境

（ Ubuntu18配置连接xshell ）

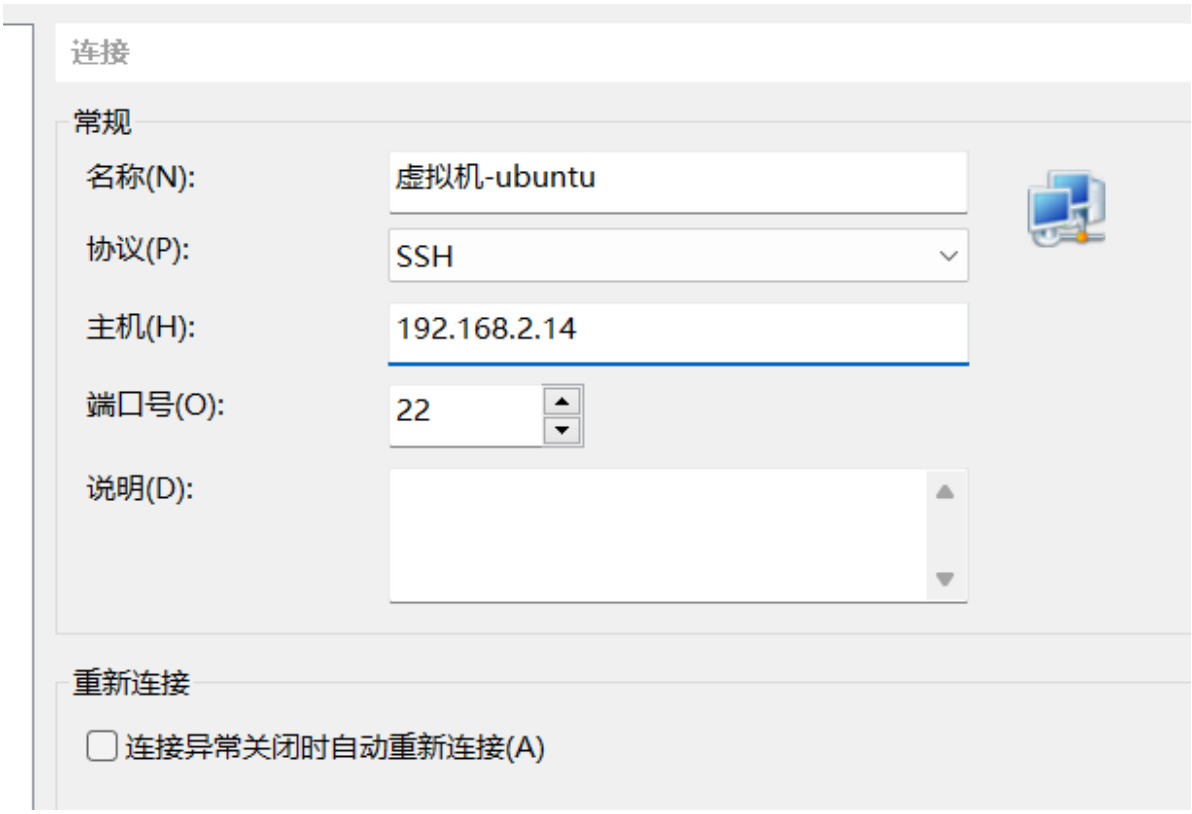
依次输入：`sudo apt install net-tools`

`sudo apt-get install openssh-server`

`sudo ufw allow 22`

4. 连接xshell和xftp

注意：端口一直为22



安装miniconda3（李沐）

配置虚拟机

（**用Ubuntu子系统下载安装Miniconda3（小白版）**，包含多种操作）

1. 输入:`sudo apt update`，更新环境
2. 输入：`sudo apt install build-essential`
3. 配置python3.8环境，输入：`sudo apt install python3.8`
4. 下载miniconda3，输入：`wget https://mirrors.tuna.tsinghua.edu.cn/anaconda/miniconda/Miniconda3-latest-Linux-x86_64.sh`

5. 安装miniconda3，输入：`bash Miniconda3-latest-Linux-x86_64.sh`
6. 进入base环境，输入：`bash`
7. 安装必要的包，输入：`pip install jupyter d2l torch torchvision`

   （貌似配置了清华源之后不用挂外网）

   （pytorch镜像：`pip install torch torchvision -i http://mirrors.aliyun.com/pypi/simple/  --trusted-host mirrors.aliyun.com`）

   （豆瓣源：`-i http://pypi.douban.com/simple/ --trusted-host pypi.douban.com`）

   （配置清华源：

   ```
   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 --add channels
   https://mirrors.tuna.tsinghua.edu.cn/anaconda/cloud/conda-forge/
   conda config --add channels
   https://mirrors.tuna.tsinghua.edu.cn/anaconda/cloud/bioconda/
   conda config --set show_channel_urls yes
   ```

   ）

   > 清华：**https://pypi.tuna.tsinghua.edu.cn/simple**
   >
   > 阿里云：**https://mirrors.aliyun.com/pypi/simple/**
   >
   > 中国科技大学：**https://pypi.mirrors.ustc.edu.cn/simple/**
   >
   > **pip install xxx -i ……**

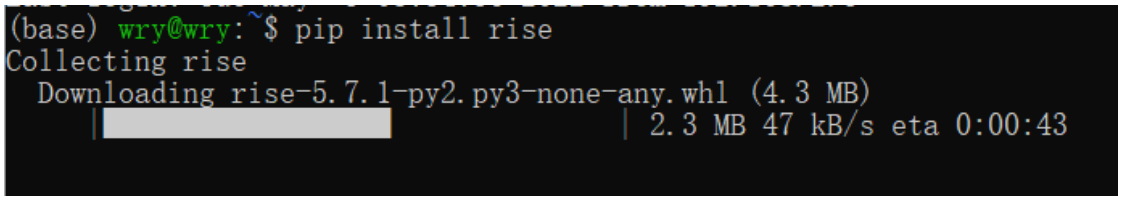
8. 下载测试用例：`wget https://zh-v2.d2l.ai/d2l-zh.zip`
9. 下载解压包，输入：
10. 解压，输入：`unzip d2l-zh.zip`
11. 进入pytorch版本，输入：`cd pytorch/`

    退出，输入：`cd ..`
12. 连接git，输入:`git clone https://github.com/d2l-ai/d2l-zh-pytorch-slides`

连接虚拟机和本地

1. 开启虚拟机的jupyter，输入：`jupyter notebook`
2. 打开本地cmd，输入：`ssh -L8888:localhost:8888 wry@192.168.2.14`，再输入对应密码
3. 点击虚拟机中的locahost地址，能在本地浏览器中访问虚拟机的jupyter

4. 本地cmd中安装插件，用来解析幻灯片格
5. 式，输入：`pip install rise`



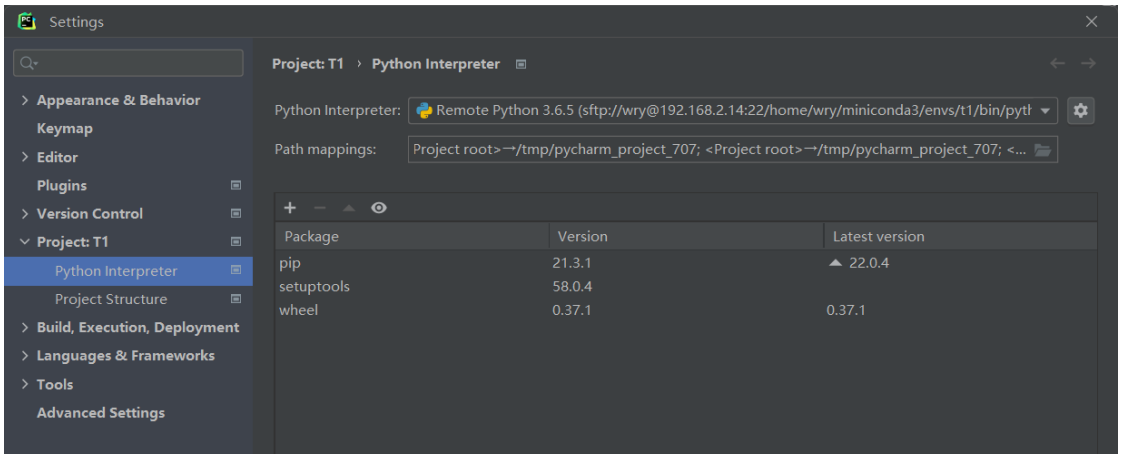
配置环境

虚拟环境中创建新环境

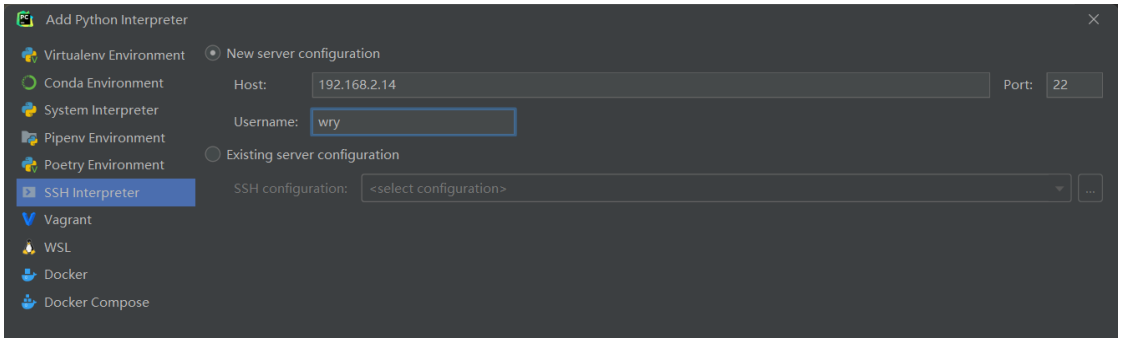
1. 创建环境，输入：`conda create -n t1 python=3.6.5`
2. 检测环境，输入：`conda env list`
3. 激活环境，输入：`conda activate t1`

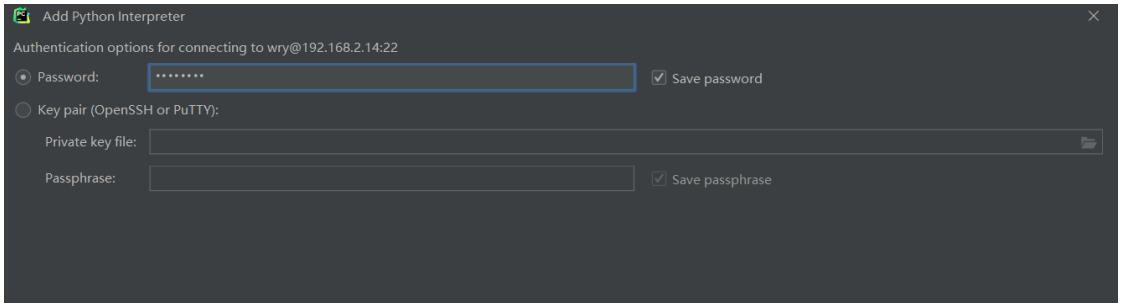
pycharm连接远程pycharm

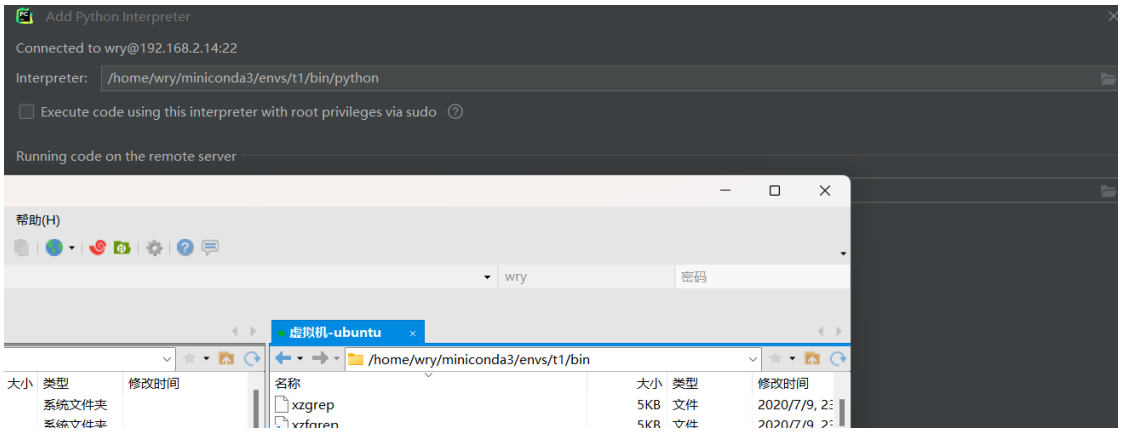
1. 进入settings



2. 配置设置



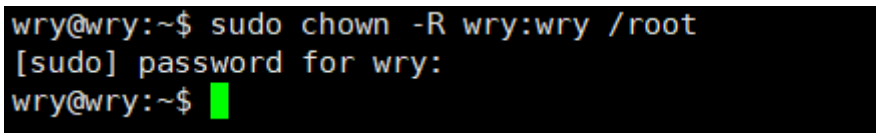




3. 配置成功

Note

1. 授权wry进入root文件夹的权限



输入：`sudo chown -R wry:wry /root`

2. 进入root环境

输入：`su root`

如果发生错误，提示**Authentication failure**，则按照下面步骤：

1. 输入：`sudo passwd root`
2. 输入：`su`
3. 成功进入root

```
wry@wry:~$ su root
Password:
su: Authentication failure
wry@wry:~$ su
Password:
su: Authentication failure
wry@wry:~$ sudo passwd root
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
wry@wry:~$ su
Password:
root@wry:/home/wry# su root
```

3. GPU安装

（补充：安装英伟达驱动： CUDA Toolkit 11.6 Update 2 Downloads | NVIDIA Developer **，将其提供的代码输一遍即可（虽然我失败了……））**

4. 配置链接

设置路径，输入：`echo ". /root/miniconda3/etc/profile.d/conda.sh" >> ~/.bashrc`

设置软连接，输入：`sudo ln -s /root/miniconda3/etc/profile.d/conda.sh /etc/profile.d/conda.sh`

（每次进入root账户自动执行，输入：`echo "conda activate" >> ~/.bashrc`）

输入：`source .bashrc`

5. 修改python

1. 配置root环境：`sudo passwd root`
2. 进入root环境：`su root`
3. 配置python3.6.5环境

   输入：`sudo apt install python3.6`

   更新系统，输入：`sudo apt-get update`

   执行安装，输入：`sudo apt-get install python3.6`

   输入：`python`

   （如果不全是3.6.5，则继续后面步骤）

   查看python指向，输入`: sudo ls -l /usr/bin | grep python`

删除原有python软连接，输入：`sudo rm /usr/bin/python`

修改python指向python3.6，输入：`sudo ln -s /usr/bin/python3.6 /usr/bin/python`

更新ppa，输入：`sudo add-apt-repository ppa:deadsnakes/ppa`

更新系统，输入：`sudo apt-get update`

安装pip，输入：`sudo apt-get install python3.6-pip`

建立pip到pip3的软连接，输入：`sudo ln -s /usr/bin/pip3 /usr/bin/pip`

查看pip版本，输入：`pip --version`

6. 注册Nvidia

7. 本地安装

安装pytorch（**conda install pytorch安装缓慢的解决办法**）

`conda install pytorch==1.7.1 torchvision==0.8.2 torchaudio==0.7.2 cudatoolkit=10.1`

（pytorch需要单独用install下载，不然会很慢）

`pip install jupyter d2l -i http://pypi.douban.com/simple/ --trusted-host pypi.douban.com`

挂外网下载

进入jupyter，输入：`jupyter notebook`

8.允许root