

从零开始搭建一个个人博客网站--Task0

这次的主要任务是创建一个可以用来开发Django应用的开发环境。

必要软件

1. Ubuntu环境

- 可以是独系统
- 可以是虚拟机（包括WLS2）
- 也可以是云服务

2. Vscode

简单易用，非常适合初学者和全栈开发者使用。

Ubuntu环境搭建

我们课程中使用的是虚拟环境



1. 选择创建虚拟机

2. 选择镜像文件

WORKSTATION 16 PRO™



新建虚拟机向导

安装客户机操作系统
虚拟机如同物理机，需要操作系统。您将如何安装客户机操作系统？

安装来源：

☐ 安装程序光盘(D):
无可可用驱动器

☒ 安装程序光盘映像文件(iso)(M):
C:\Users\Tango\Desktop\ubuntu-20.04.2.0-desktop-a 浏览(R)...
无法读取此文件。
指定其他文件或选择其他选项继续。

☐ 稍后安装操作系统(S)。
创建的虚拟机将包含一个空白硬盘。

帮助 < 上一步(B) 下一步(N) > 取消

3. 创建用户及密码

这里的用户名要是小写

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新建虚拟机向导

简易安装信息
这用于安装 Ubuntu 64 位。

个性化 Linux

全名(F):

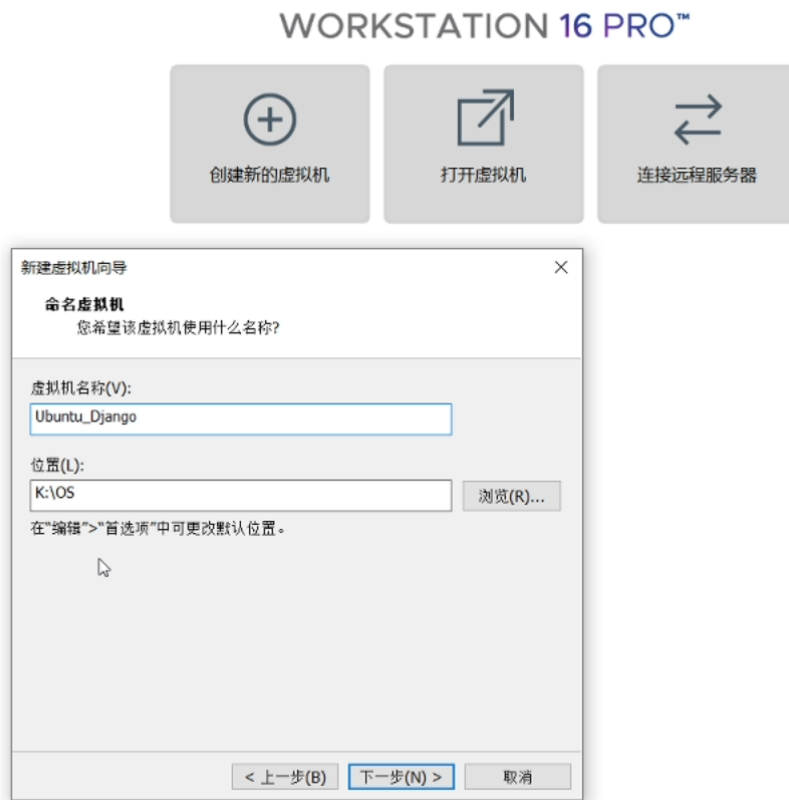
用户名(U):

密码(P):

确认(C):

帮助 < 上一步(B) 下一步(N) > 取消

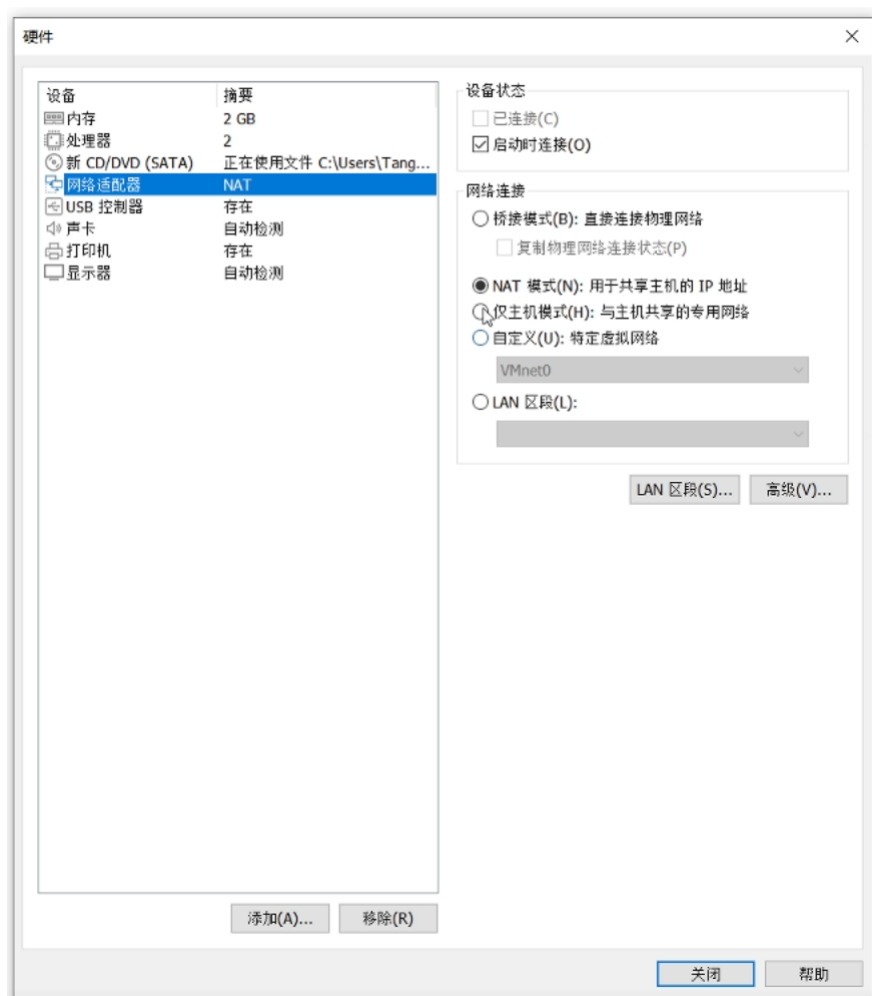
4. 选择安装位置



5. 配置硬盘大小

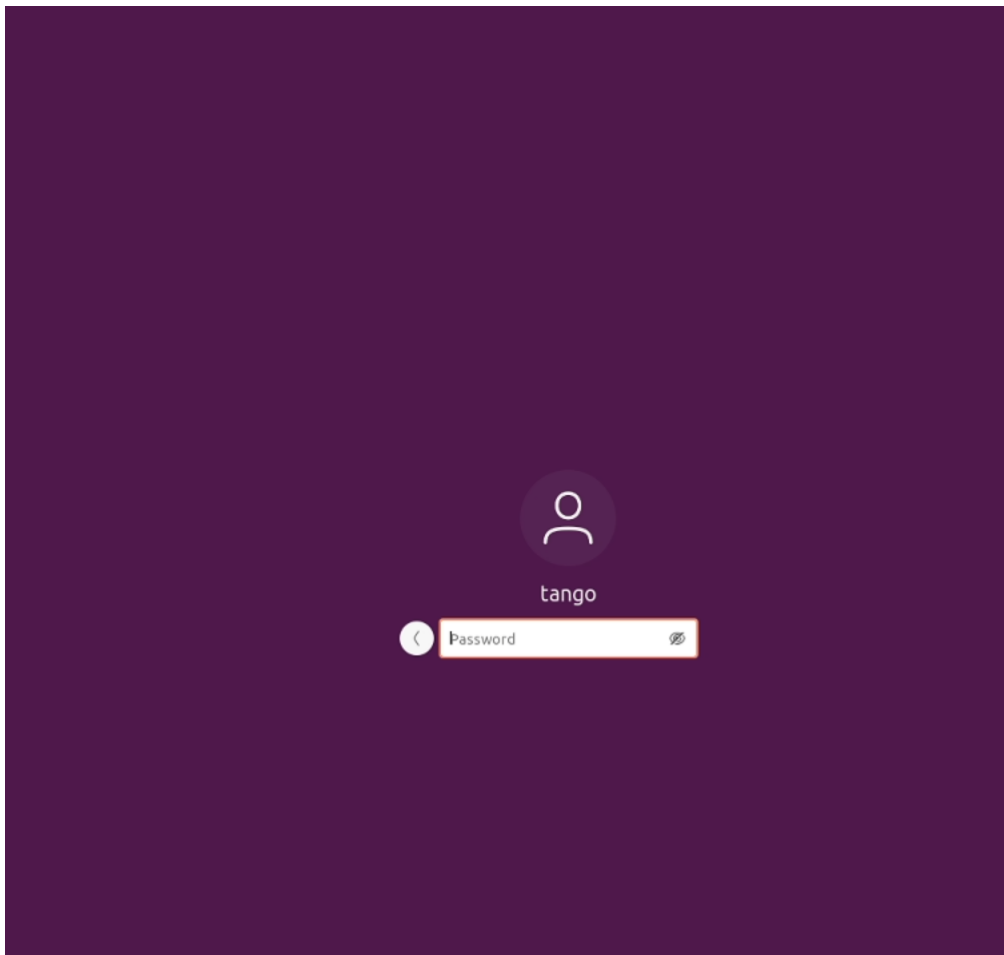


6. 设置网络为NAT



这样只要主机能访问外网，虚拟机就可以。

7. 等待安装完成

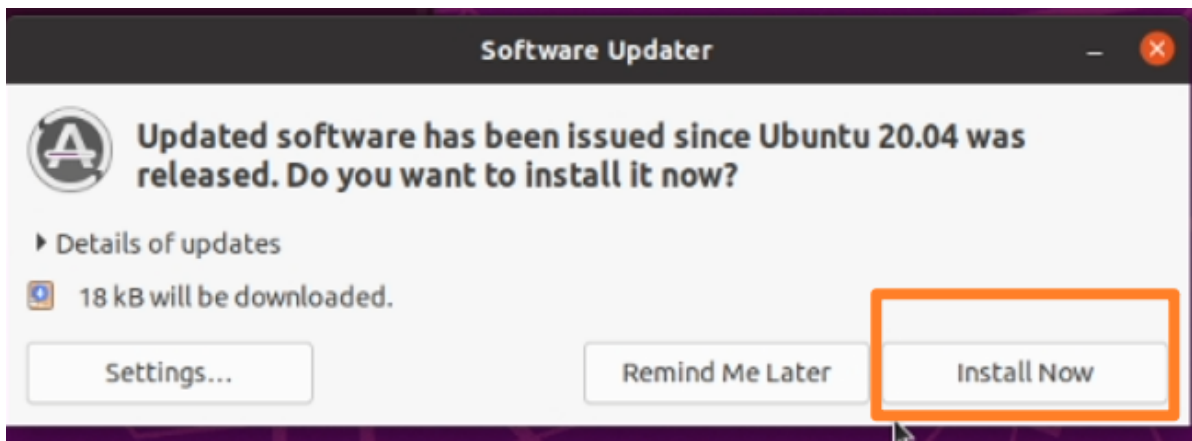


8. 初步了解环境信息---查看虚拟IP地址

```
ip a
```

```
tango@ubuntu: ~  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
tango@ubuntu:~$ ip a  
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000  
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00  
    inet 127.0.0.1/8 scope host lo  
        valid_lft forever preferred_lft forever  
    inet6 ::1/128 scope host  
        valid_lft forever preferred_lft forever  
2: ens33: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000  
    link/ether 00:0c:29:82:d2:bc brd ff:ff:ff:ff:ff:ff  
    altnme enp2s1  
    inet 192.168.73.140/24 brd 192.168.73.255 scope global dynamic noprefixroute ens33  
        valid_lft 1587sec preferred_lft 1587sec  
    inet6 fe80::558:51d3:6b2e:ac05/64 scope link noprefixroute  
        valid_lft forever preferred_lft forever  
tango@ubuntu:~$
```

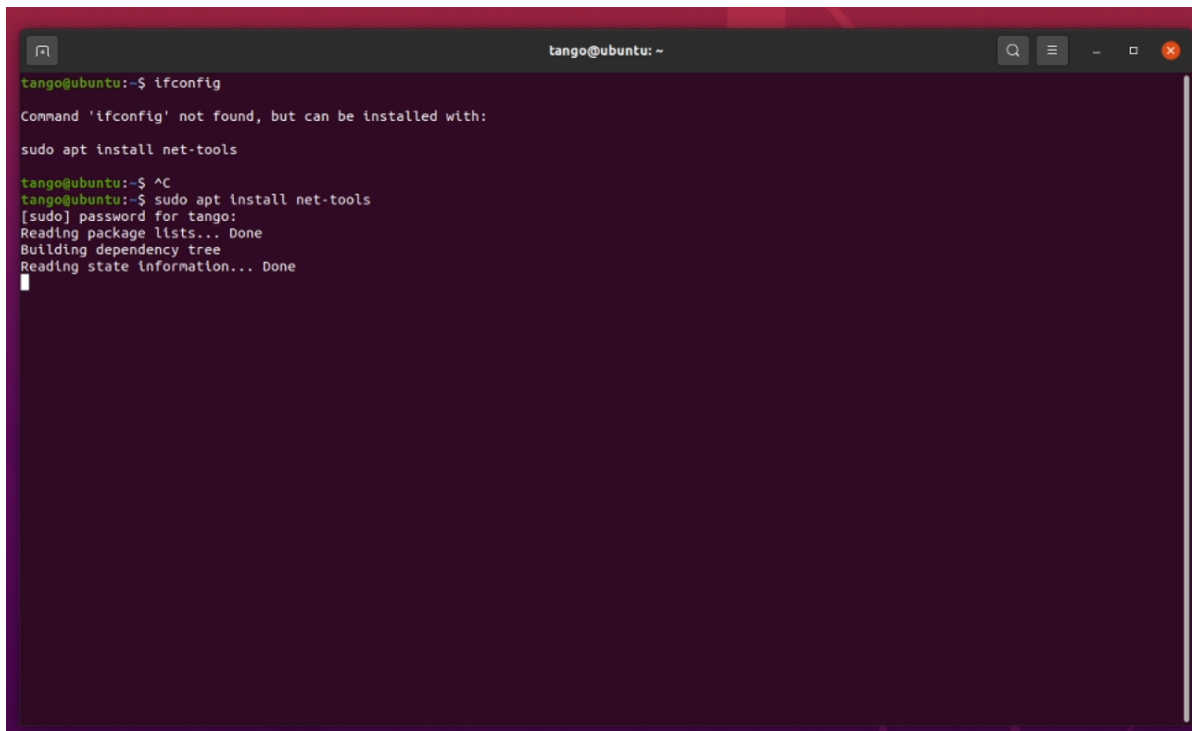
9. 初次使用可能需要做一些更新



更新完成后重启虚拟机

10. 安装网络工具

```
sudo apt install net-tools
```



完成安装后便可以使用ifconfig命令

```
tango@ubuntu: ~  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following package was automatically installed and is no longer required:  
  distro-info  
Use 'sudo apt autoremove' to remove it.  
The following NEW packages will be installed:  
  net-tools  
0 upgraded, 1 newly installed, 0 to remove and 1 not upgraded.  
Need to get 196 kB of archives.  
After this operation, 864 kB of additional disk space will be used.  
Get:1 http://us.archive.ubuntu.com/ubuntu focal/main amd64 net-tools amd64 1.60+git20180626.aebd88e-1ubuntu1 [196 kB]  
Fetched 196 kB in 2s (129 kB/s)  
Selecting previously unselected package net-tools.  
(Reading database ... 182873 files and directories currently installed.)  
Preparing to unpack .../net-tools_1.60+git20180626.aebd88e-1ubuntu1_amd64.deb ...  
Unpacking net-tools (1.60+git20180626.aebd88e-1ubuntu1) ...  
Setting up net-tools (1.60+git20180626.aebd88e-1ubuntu1) ...  
Processing triggers for man-db (2.9.1-1) ...  
tango@ubuntu:~$ ifconfig  
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet 192.168.73.140 netmask 255.255.255.0 broadcast 192.168.73.255  
    inet6 fe80::558:51d3:6b2e:ac05 prefixlen 64 scopeid 0x20<link>  
    ether 00:0c:29:82:d2:bc txqueuelen 1000 (Ethernet)  
    RX packets 233 bytes 214771 (214.7 KB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 169 bytes 15780 (15.7 KB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536  
    inet 127.0.0.1 netmask 255.0.0.0  
    inet6 ::1 prefixlen 128 scopeid 0x10<host>  
    loop txqueuelen 1000 (Local Loopback)  
    RX packets 178 bytes 14904 (14.9 KB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 178 bytes 14904 (14.9 KB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
tango@ubuntu:~$
```

在主环境查看是否可以和虚拟机进行通信

```
ping 虚拟机的IP
```

```
Microsoft Windows [版本 10.0.19043.1052]  
(c) Microsoft Corporation。保留所有权利。  
  
C:\Users\Tango>ping 192.168.73.140  
  
正在 Ping 192.168.73.140 具有 32 字节的数据:  
来自 192.168.73.140 的回复: 字节=32 时间<1ms TTL=64  
来自 192.168.73.140 的回复: 字节=32 时间<1ms TTL=64  
来自 192.168.73.140 的回复: 字节=32 时间<1ms TTL=64  
  
192.168.73.140 的 Ping 统计信息:  
    数据包: 已发送 = 3, 已接收 = 3, 丢失 = 0 (0% 丢失),  
    往返行程的估计时间(以毫秒为单位):  
        最短 = 0ms, 最长 = 0ms, 平均 = 0ms
```

11. 配置SSH服务

```
sudo apt install openssh-server
```

```
tango@ubuntu:~$ sudo apt install openssh-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following package was automatically installed and is no longer required:
  distro-info
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  ncurses-term openssh-sftp-server ssh-import-id
Suggested packages:
  molly-guard monkeysphere ssh-askpass
The following NEW packages will be installed:
  ncurses-term openssh-server openssh-sftp-server ssh-import-id
0 upgraded, 4 newly installed, 0 to remove and 1 not upgraded.
Need to get 688 kB of archives.
After this operation, 6,010 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us.archive.ubuntu.com/ubuntu focal/main amd64 ncurses-term all 6.2-0ubuntu2 [249 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu focal-updates/main amd64 openssh-sftp-server amd64 1:8.2p1-4ubuntu0.2 [51.5 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu focal-updates/main amd64 openssh-server amd64 1:8.2p1-4ubuntu0.2 [377 kB]
Get:4 http://us.archive.ubuntu.com/ubuntu focal/main amd64 ssh-import-id all 5.10-0ubuntu1 [10.0 kB]
Fetched 688 kB in 4s (184 kB/s)
Preconfiguring packages ...
Selecting previously unselected package ncurses-term.
(Reading database ... 182922 files and directories currently installed.)
Preparing to unpack .../ncurses-term_6.2-0ubuntu2_all.deb ...
Unpacking ncurses-term_6.2-0ubuntu2 ...
```

12. 设置防火墙

```
sudo ufw allow ssh
```

13. 查看服务是否开启

```
systemctl status ssh
```

```
tango@ubuntu:~$ sudo ufw allow ssh
Rules updated
Rules updated (v6)
tango@ubuntu:~$ systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/lib/systemd/systemd/ssh.service; enabled; vendor preset: enabled)
   Active: active (running) since Sat 2021-06-12 06:00:12 PDT; 1min 44s ago
     Docs: man:sshd(8)
           man:sshd_config(5)
   Main PID: 2985 (sshd)
     Tasks: 1 (limit: 2279)
    Memory: 1.3M
   CGroup: /system.slice/ssh.service
           └─2985 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups

Jun 12 06:00:12 ubuntu systemd[1]: Starting OpenBSD Secure Shell server...
Jun 12 06:00:12 ubuntu sshd[2985]: Server listening on 0.0.0.0 port 22.
Jun 12 06:00:12 ubuntu sshd[2985]: Server listening on :: port 22.
Jun 12 06:00:12 ubuntu systemd[1]: Started OpenBSD Secure Shell server.
```

13. 在windows系统中确认是否可以通过SSH进行链接

```
ssh Ubuntu用户名@Ubuntu Ip地址
```

```
C:\Users\Tango>ssh tango@192.168.73.140
The authenticity of host '192.168.73.140 (192.168.73.140)' can't be established.
ECDSA key fingerprint is SHA256:aV/LCCG2aYUc9vsvhaexwVz9omqtF0+rni8KoN4e3gc.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.73.140' (ECDSA) to the list of known hosts.
tango@192.168.73.140's password:
Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 5.8.0-55-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

0 updates can be applied immediately.

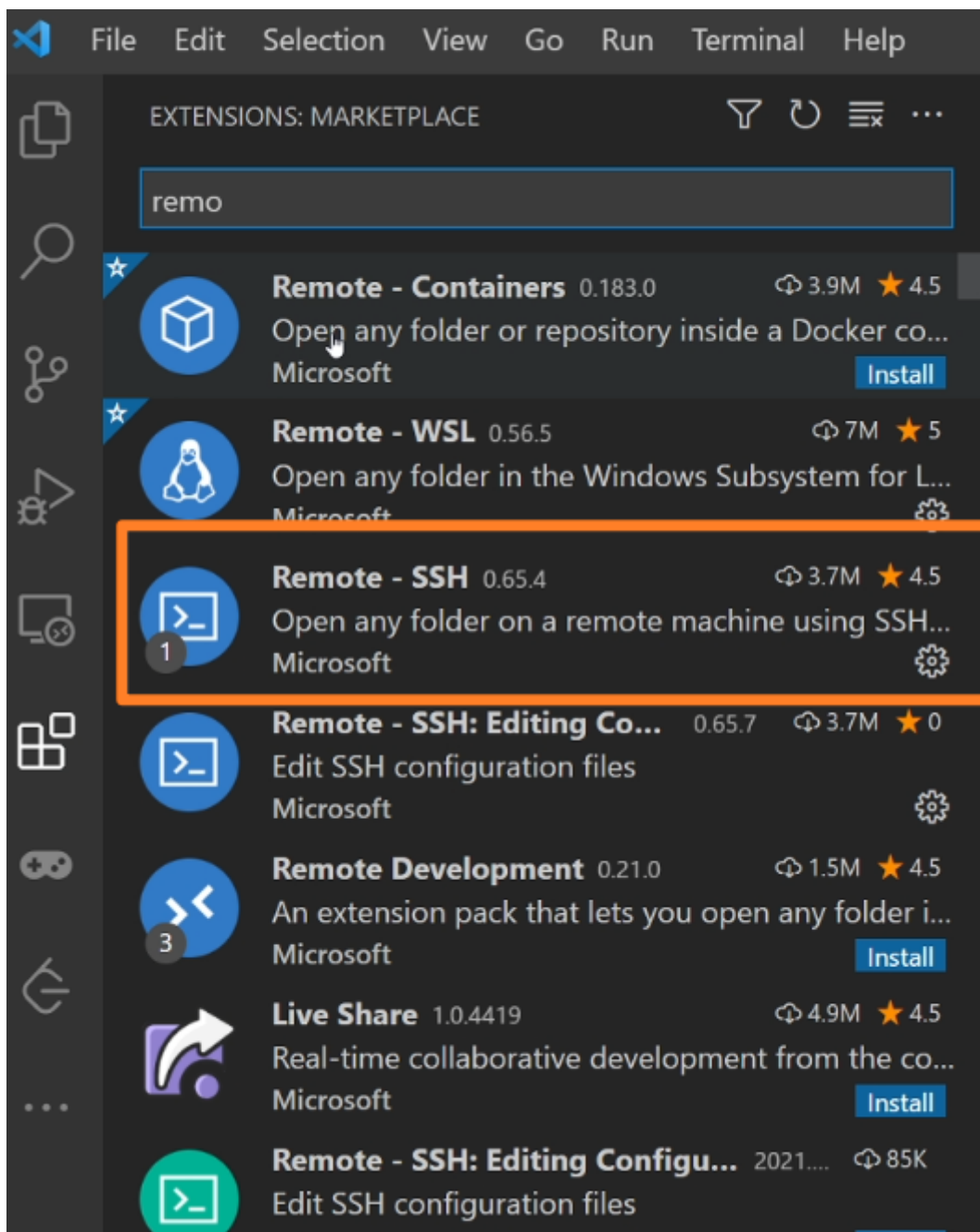
Your Hardware Enablement Stack (HWE) is supported until April 2025.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

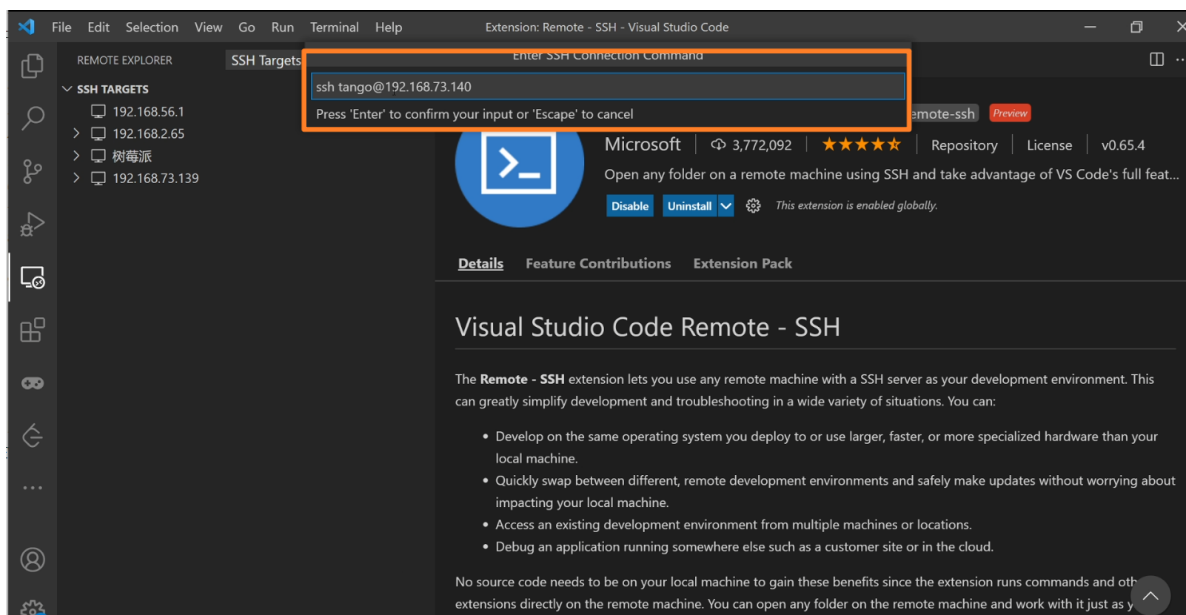
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
```

在VSCode中进行开发

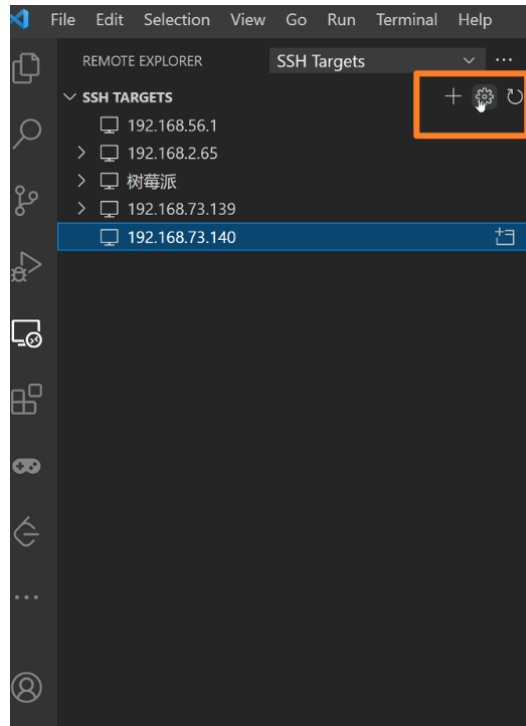
1. 添加Vscode的远程插件



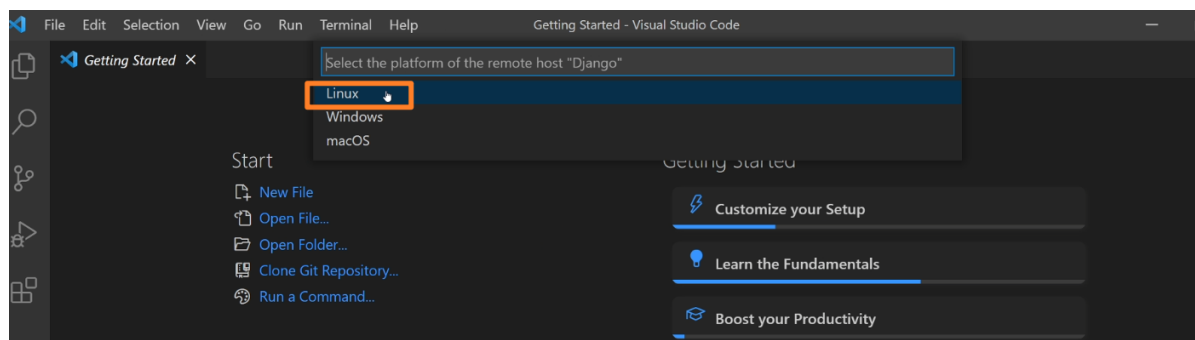
2. 添加链接



点击左边远程的图标后，在菜单栏可以看到一个加号，点击加号即可添加远程链接

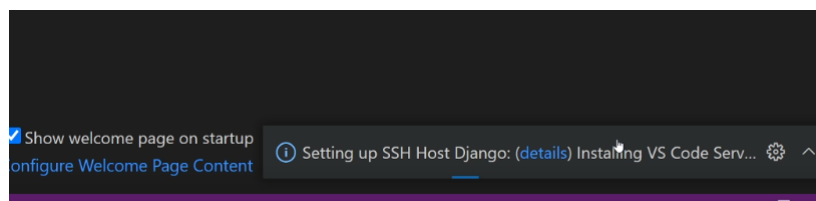


3. 进行链接

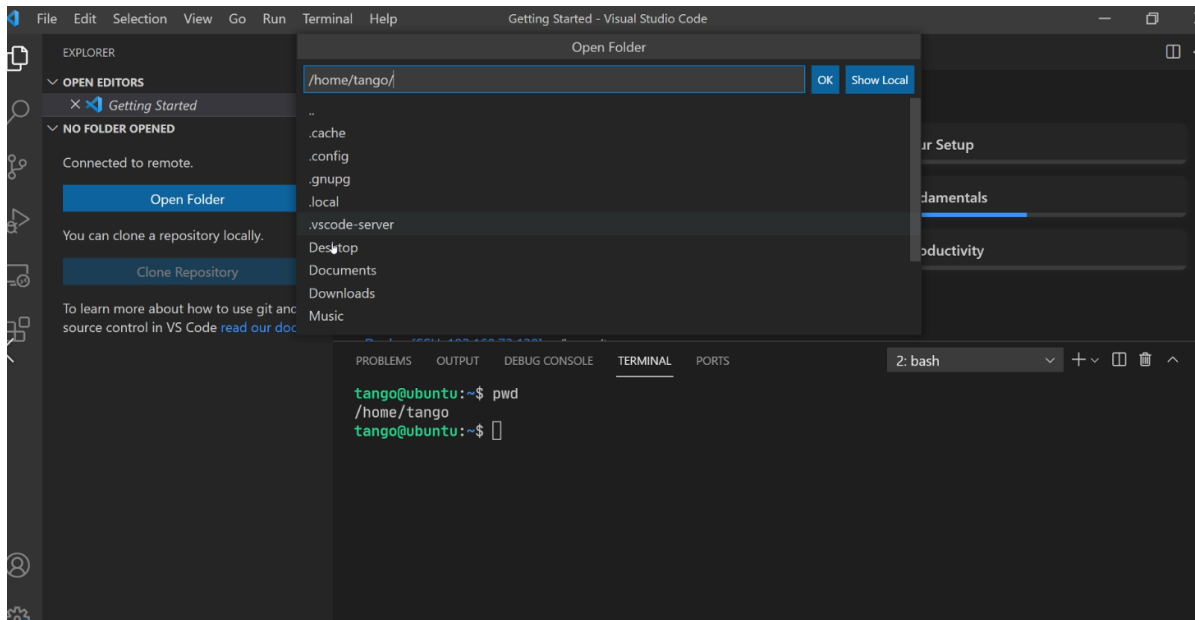


第一次链接时需要选择一下目标的操作系統，我们这里选择Linux

然后输入密码即可进入到Ubuntu的操作环境



第一次链接的时候会比较慢，可以看到右下角有个安装服务在进行，稍等片刻即可。



搭建Django项目的开发环境

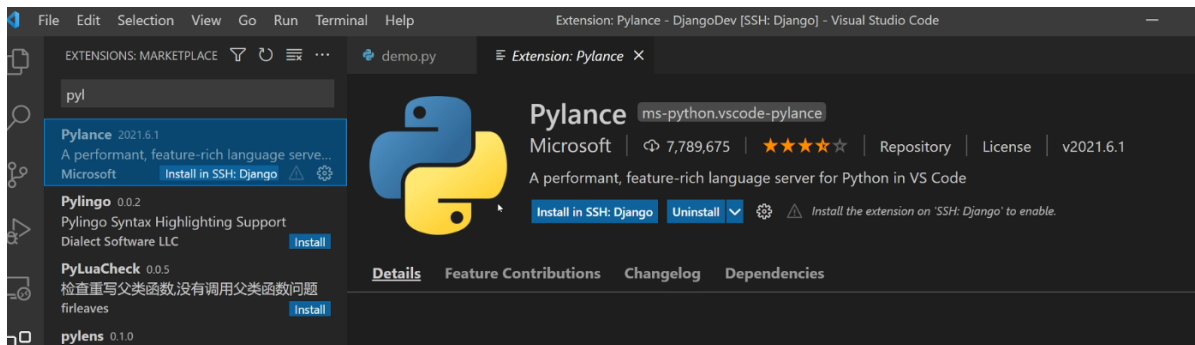
1. 基础设置

创建项目保存的目录

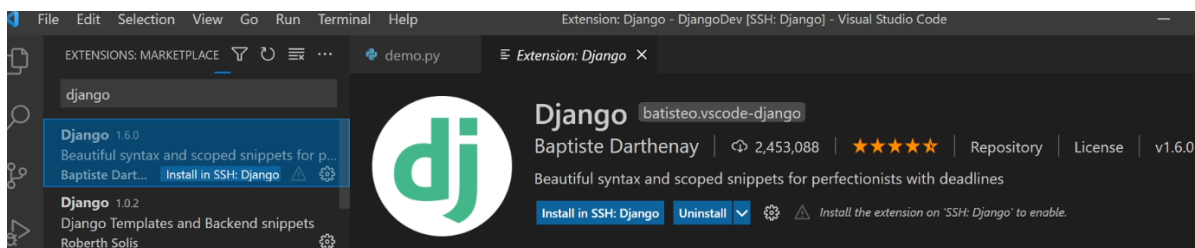
```
mkdir DjangoDev
cd DjangoDev
```

2. 配置开发用的插件

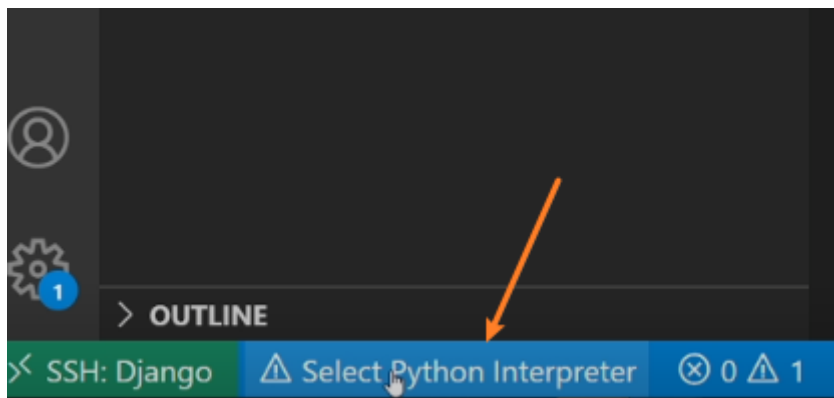
Pylance插件



Django插件



选择对应的环境



这一步很重要，尤其是我们能开发时会有多个虚拟环境

3. 安装venv库

```
sudo apt-get install python3-venv
```

4. 创建虚拟环境

```
mkdir env  
cd env  
python3 -m venv .
```

注意venv后面有一个空格

5. 激活虚拟环境

```
source bin/activate
```

不同的操作系统稍微有些不同。

```
Unpacking python3.8-venv (3.8.5-1~20.04.3) ...  
Selecting previously unselected package python3-venv.  
Preparing to unpack .../python3-venv_3.8.2-0ubuntu2_amd64.deb ...  
Unpacking python3-venv (3.8.2-0ubuntu2) ...  
Setting up python3-distutils (3.8.10-0ubuntu1~20.04) ...  
Setting up python-pip-whl (20.0.2-5ubuntu1.5) ...  
Setting up python3.8-venv (3.8.5-1~20.04.3) ...  
Setting up python3-venv (3.8.2-0ubuntu2) ...  
Processing triggers for man-db (2.9.1-1) ...  
tango@ubuntu:~/Desktop/DjangoDev/env$ python3 -m venv .  
tango@ubuntu:~/Desktop/DjangoDev/env$ ls  
bin  include  lib  lib64  pyenv.cfg  share  
tango@ubuntu:~/Desktop/DjangoDev/env$ source bin/activate  
(env) tango@ubuntu:~/Desktop/DjangoDev/env$
```

6. 创建Django项目

安装django库

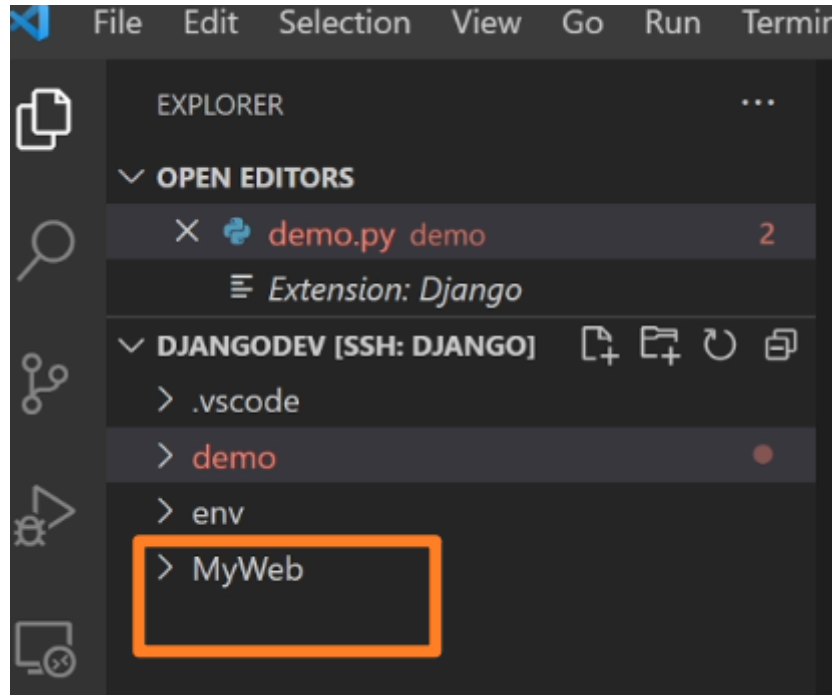
```
pip3 install django
```

如果速度比较慢可以考虑换成国内镜像

```
Collecting sqlparse>=0.2.2
  Downloading https://mirrors.aliyun.com/pypi/packages/14/05/6e8eb62ca685b10e34051a80d7ea94b7137369d8c0be5c3b9d9b6e3f5dae/sqlparse-0.4.1-py3-none-any.whl (42 kB)
    |#####| 42 kB 974 kB/s
Collecting asgiref<4,>=3.3.2
  Downloading https://mirrors.aliyun.com/pypi/packages/17/8b/05e225d11154b8f5358e6a6d277679c9741ec0339d1e451c9cef687a9170/asgiref-3.3.4-py3-none-any.whl (22 kB)
Collecting pytz
  Downloading https://mirrors.aliyun.com/pypi/packages/70/94/784178ca5dd892a98f113cdd923372024dc04b8d40abe77ca76b5fb90ca6/pytz-2021.1-py2.py3-none-any.whl (510 kB)
    |#####| 510 kB 4.3 MB/s
Installing collected packages: sqlparse, asgiref, pytz, django
Successfully installed asgiref-3.3.4 django-3.2.4 pytz-2021.1 sqlparse-0.4.1
(env) tango@ubuntu:~/Desktop/DjangoDev/demo$
```

创建项目

```
django-admin startproject MyWeb
```



启动项目

```
cd MyWeb
python manage.py runserver
```

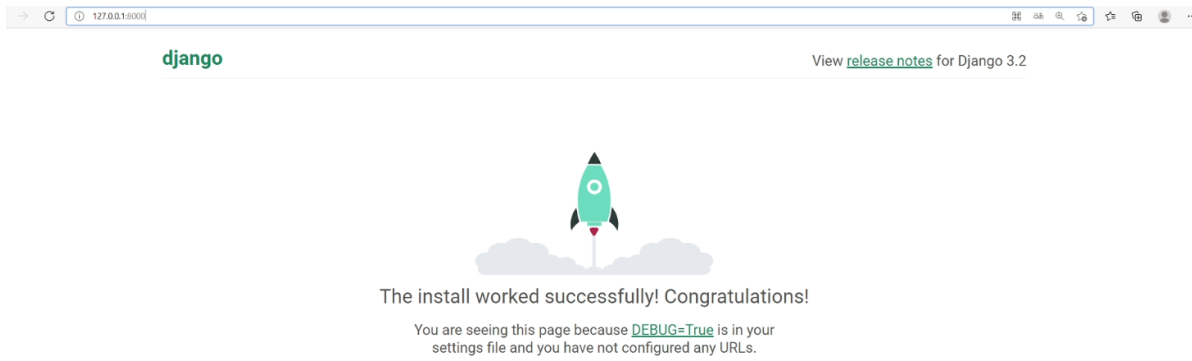
```
(env) tango@ubuntu:~/Desktop/DjangoDev/MyWeb$ python manage.py runserver
Watching for file changes with StatReloader
Performing system checks...

System check identified no issues (0 silenced).

You have 18 unapplied migration(s). Your project may not work properly until you apply the migrations for app(s): admin, auth, contenttypes, sessions.
Run 'python manage.py migrate' to apply them.
June 12, 2021 - 13:25:39
Django version 3.2.4, using settings 'MyWeb.settings'
Starting development server at http://127.0.0.1:8000/
Quit the server with CONTROL-C.
```

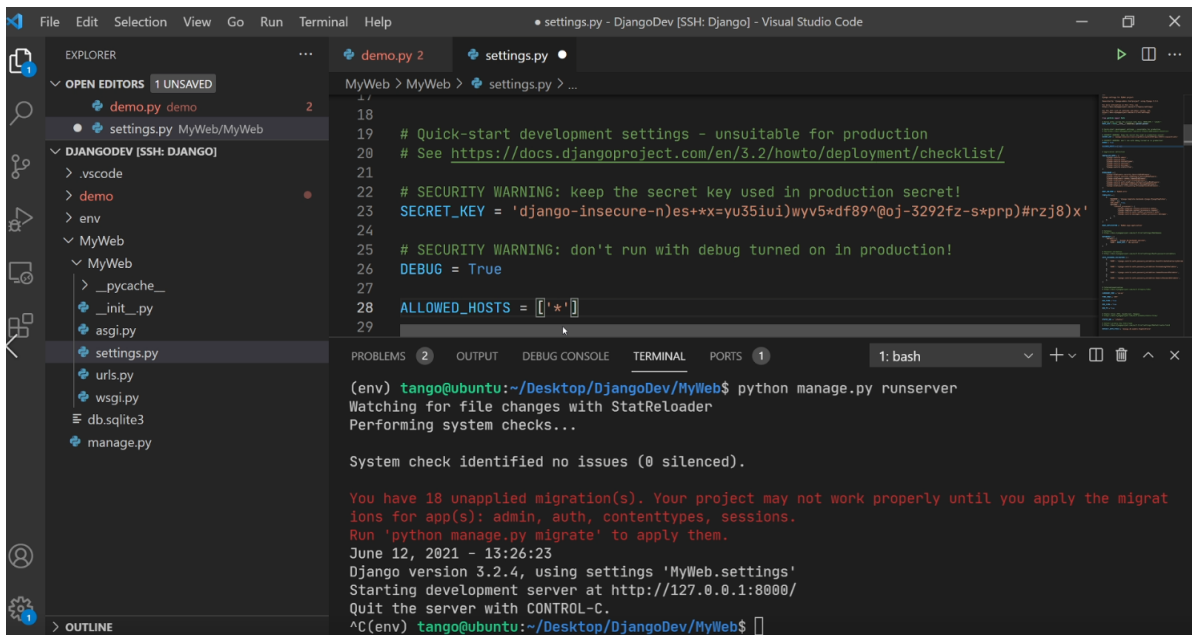
Your application running on port 8000 is available. [See all forwarded ports](#)

[Open in Browser](#) [Preview in Editor](#)



看到这架小飞机，就表示你成功了。

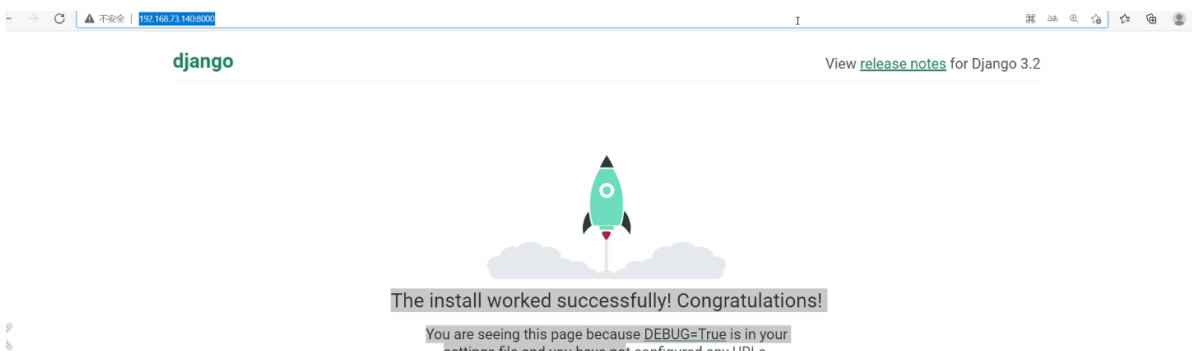
为了其他地方也可以访问，我们将settings里面的配置修改一下



```
ALLOWED_HOSTS = ['*']
```

我们后面会详细讲解

这样我们就可以通过虚拟机的IP地址进行访问了。



配置宝塔服务

这个大家直接参考官网即可。

https://www.bt.cn/?invite_code=MV9ma3FgZHk=

