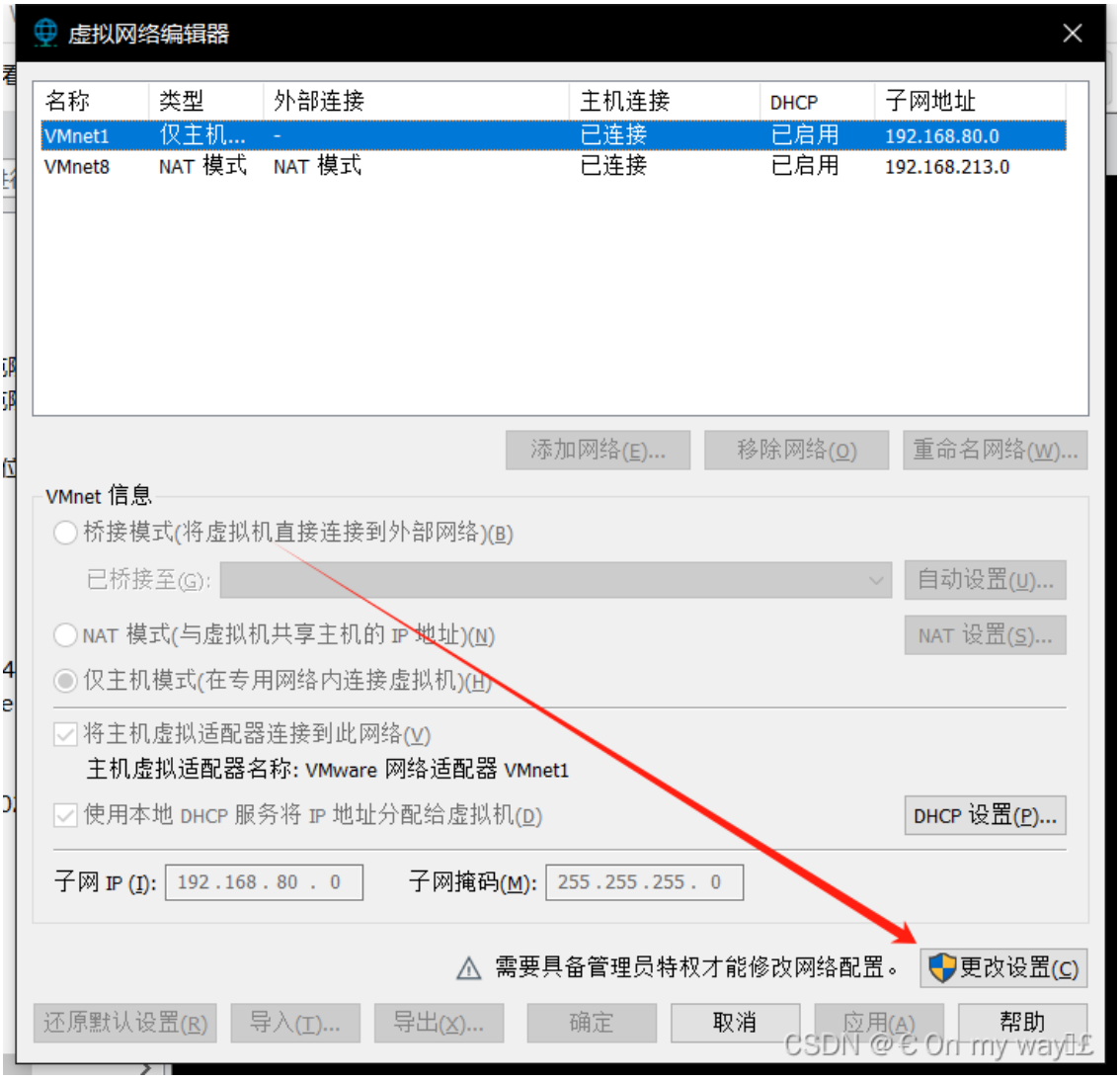
搭建LAPM （Linux、Apache、PHP、MYSQL）

本篇文章讲解了如何在Linux系统上搭建自己的web服务，并在windows浏览器中展示。

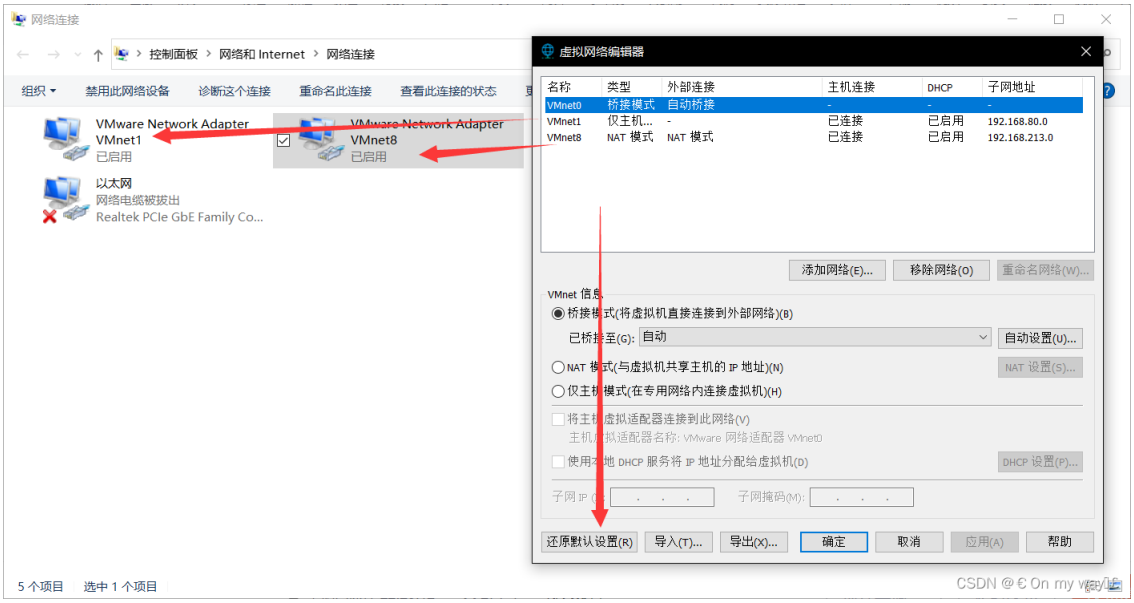
LINUX

- 搭建Linux系统需要虚拟机与windows系统隔离，这里给出vmware的链接各位自行下载
- https://www.vmware.com/cn/products/workstation-pro.html
- 下载完VMware需要安装Ubuntu或者centos的映像快速部署Linux系统，本文以Centos7为例。
- 安装完centos7后，想要虚拟机与windows相通，必须配置网络，打开虚拟网络编辑器。
- 

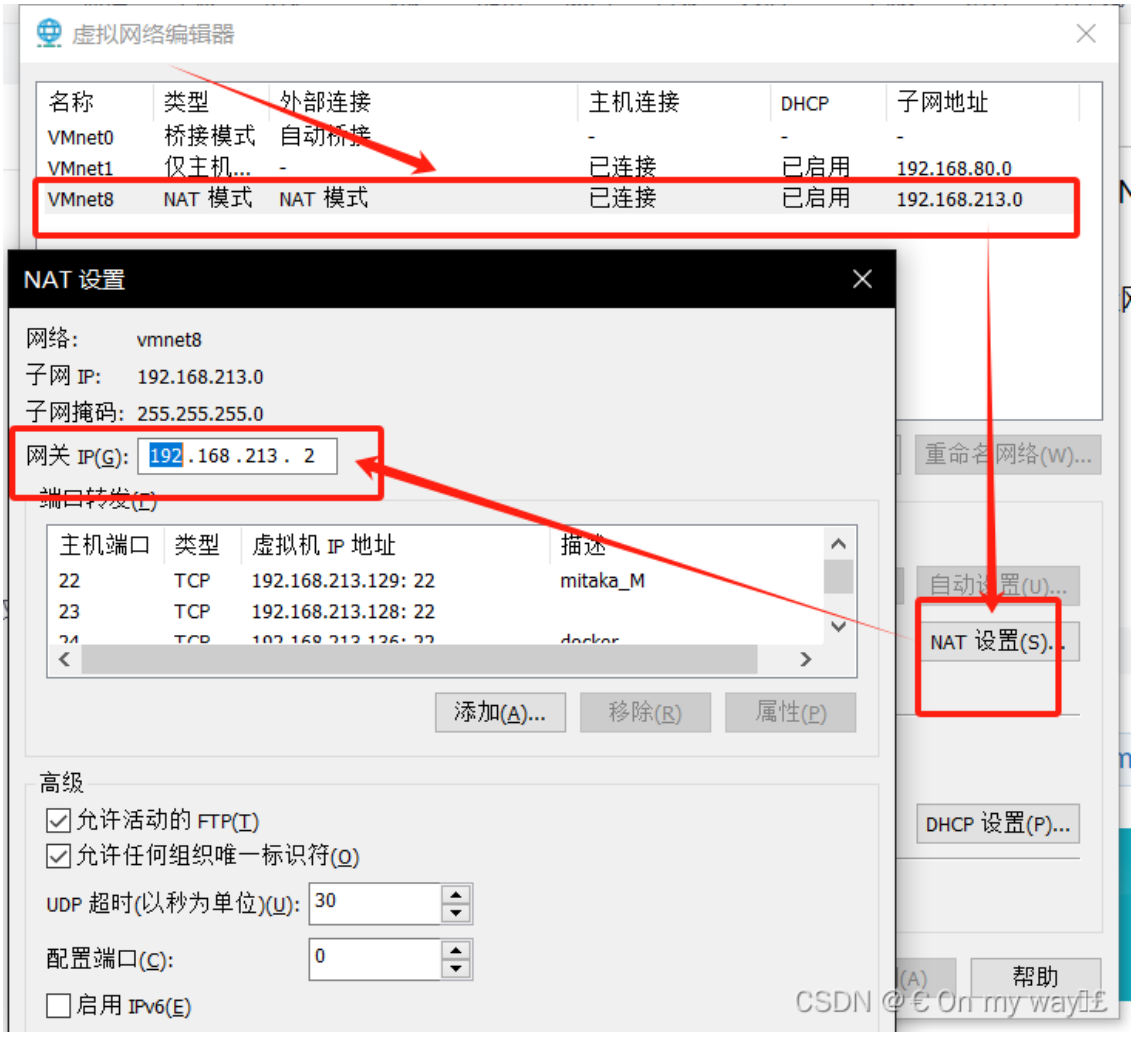
- 选择更改设置
-

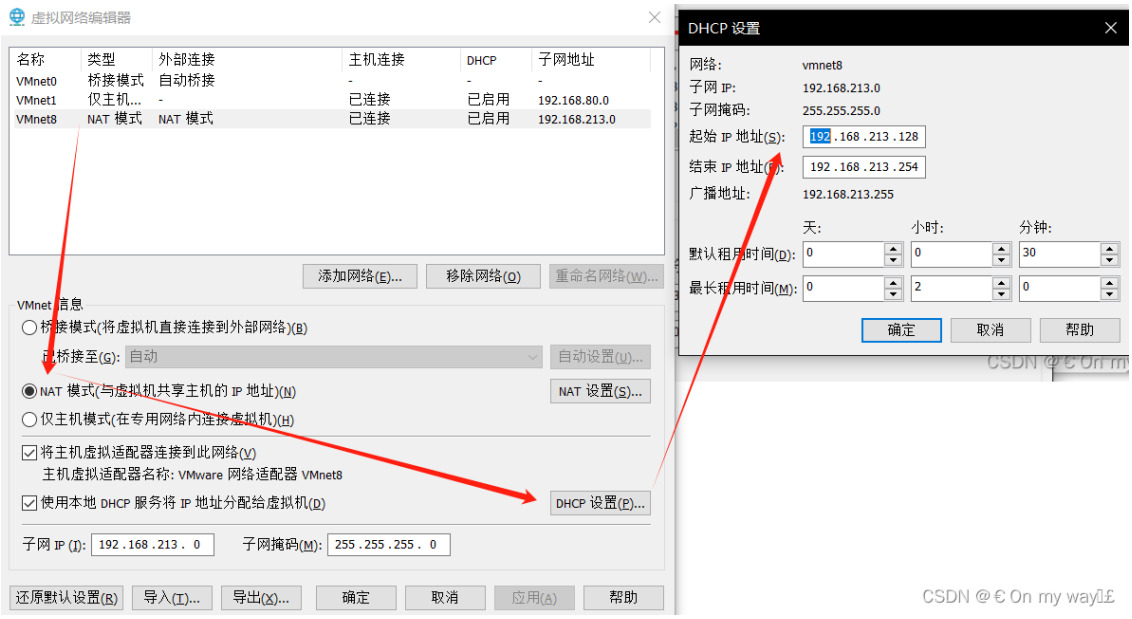


- 选择还原默认设置，然后会发现VMware和电脑网卡出现两个分别对应的网卡VMnet1（DHCP）和VMnet8（static），VMnet0为桥接模式，选择此模式意味着虚拟机和你的电脑共享电脑IP。



- 然后选中NAT模式，点击NET设置，查看配置你的虚拟机采用此模式下的IP地址网关。这里可以设置端口转发。

- 

- 接下来同样选中net模式，点击DHCP配置，在这里查看修改你的虚拟IP地址范围，DHCP为动态分配IP，每次开机会给你的虚拟机在这个范围内随机分配一个IP。
- 

- 回到虚拟机配置IP
- 输入ip addr 查看你的IP网卡名以及分配的IP
-

```
[root@anible0284 etc]# ip addr
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 pfifo_fast state UP group default qlen 10
00
    link/ether 00:0c:29:89:00:25 brd ff:ff:ff:ff:ff:ff
    inet 192.168.68.139/24 brd 192.168.68.255 scope global noprefixroute dynamic ens33
       valid_lft 40544sec preferred_lft 40544sec
    inet 192.168.119.130/24 brd 192.168.119.255 scope global ens33
       valid_lft forever preferred_lft forever
    inet6 2409:8a62:374:5aa0::3e2/128 scope global noprefixroute dynamic
       valid_lft 223641sec preferred_lft 137241sec
    inet6 2409:8a62:374:5aa0:3828:12d3:96fd:f4c5/64 scope global noprefixroute dynamic
       valid_lft 42004sec preferred_lft 42004sec
    inet6 fe80::1bde:7538:4b25:d1b4/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
[root@anible0284 etc]#
```


- cd /etc/sysconfig/network-scripts/ （配置网卡的路径）
- ls （展示网卡）
-

```
[root@anible0284 network-scripts]# cd /etc/sysconfig/network-scripts/
[root@anible0284 network-scripts]# ls
ifcfg-ens33  ifdown-ipv6    ifdown-Team      ifup-eth    ifup-post      ifup-tunnel
ifcfg-lo     ifdown-isdn    ifdown-TeamPort  ifup-ippp   ifup-ppp       ifup-wireless
ifdown       ifdown-post    ifdown-tunnel    ifup-ipv6   ifup-routes    init.ipv6-global
ifdown-bnep  ifdown-ppp     ifup             ifup-isdn   ifup-sit       network-functions
ifdown-eth   ifdown-routes  ifup-aliases     ifup-plip   ifup-Team      network-functions-ipv6
ifdown-ippp  ifdown-sit     ifup-bnep        ifup-plusb  ifup-TeamPort
[root@anible0284 network-scripts]#
```


- vi ifcfg-ens33 （进入编辑你的对应网卡名这个文件，使用vi编辑器，如果不熟悉可以去了解一下），如果要配置DHCP动态的IP（每次开机都在范围内给你分配一个不同的IP），只需要将这里的static改成DHCP、ONBOOT改为yes即可。其他保持默认只需要配置这两个。然后键盘esc，输入一个冒号加wq!保存退出(:wq!)。
-

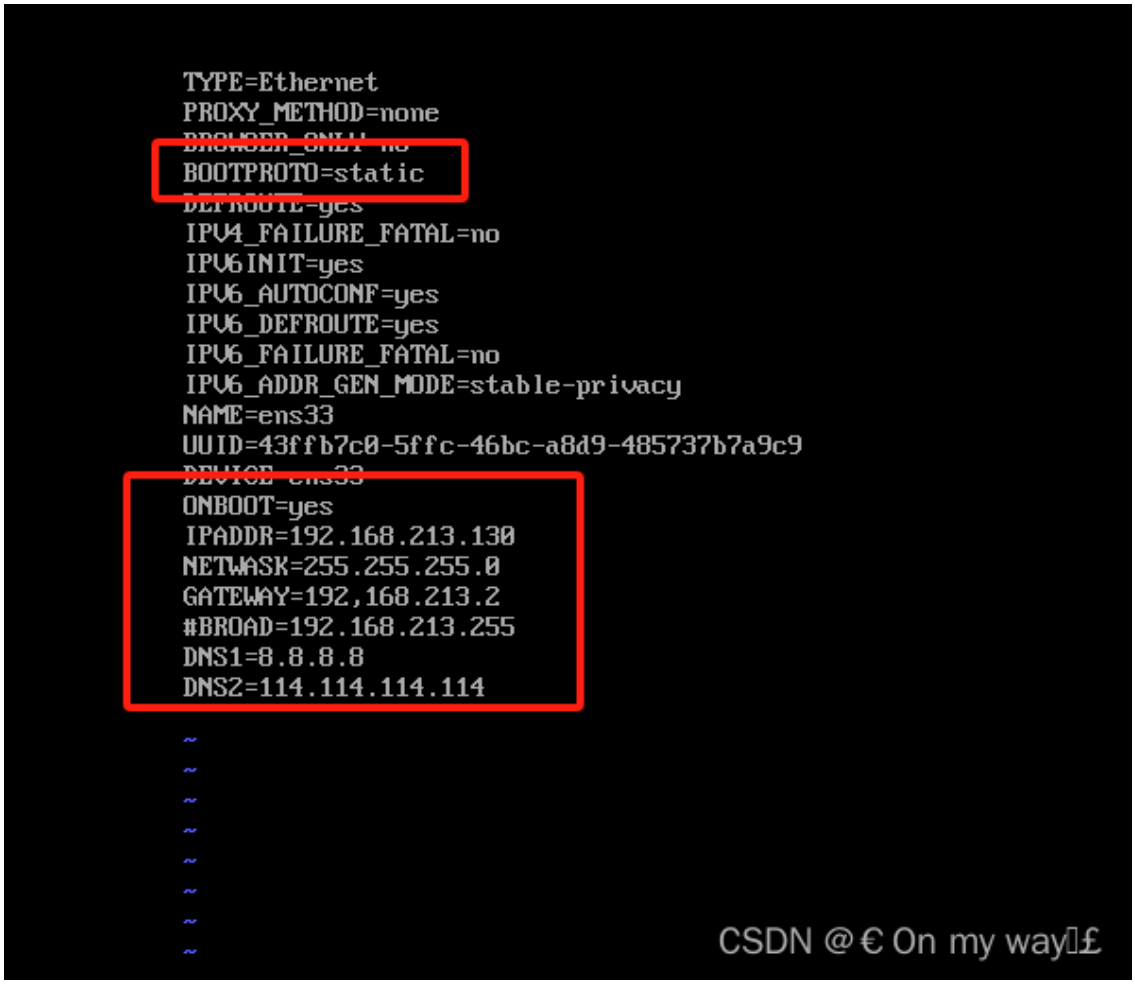
```
TYPE=Ethernet
PROXY_METHOD=none
BROWSER_ONLY=no
BOOTPROTO=static
DEFROUTE=yes
IPV4_FAILURE_FATAL=no
IPV6INIT=yes
IPV6_AUTOCONF=yes
IPV6_DEFROUTE=yes
IPV6_FAILURE_FATAL=no
IPV6_ADDR_GEN_MODE=stable-privacy
NAME=ens33
UUID=43ffb7c0-5ffc-46bc-a8d9-485737b7a9c9
DEVICE=ens33
ONBOOT=yes
IPADDR=192.168.119.130
NETWASK=255.255.255.0
GATEWAY=192,168.119.2
#BROAD=192.168.119.255
DNS1=8.8.8.8
DNS2=114.114.114.114
~
~
~
~
~
~
~
~
~
~
~
~
~
~
-- INSERT --
```

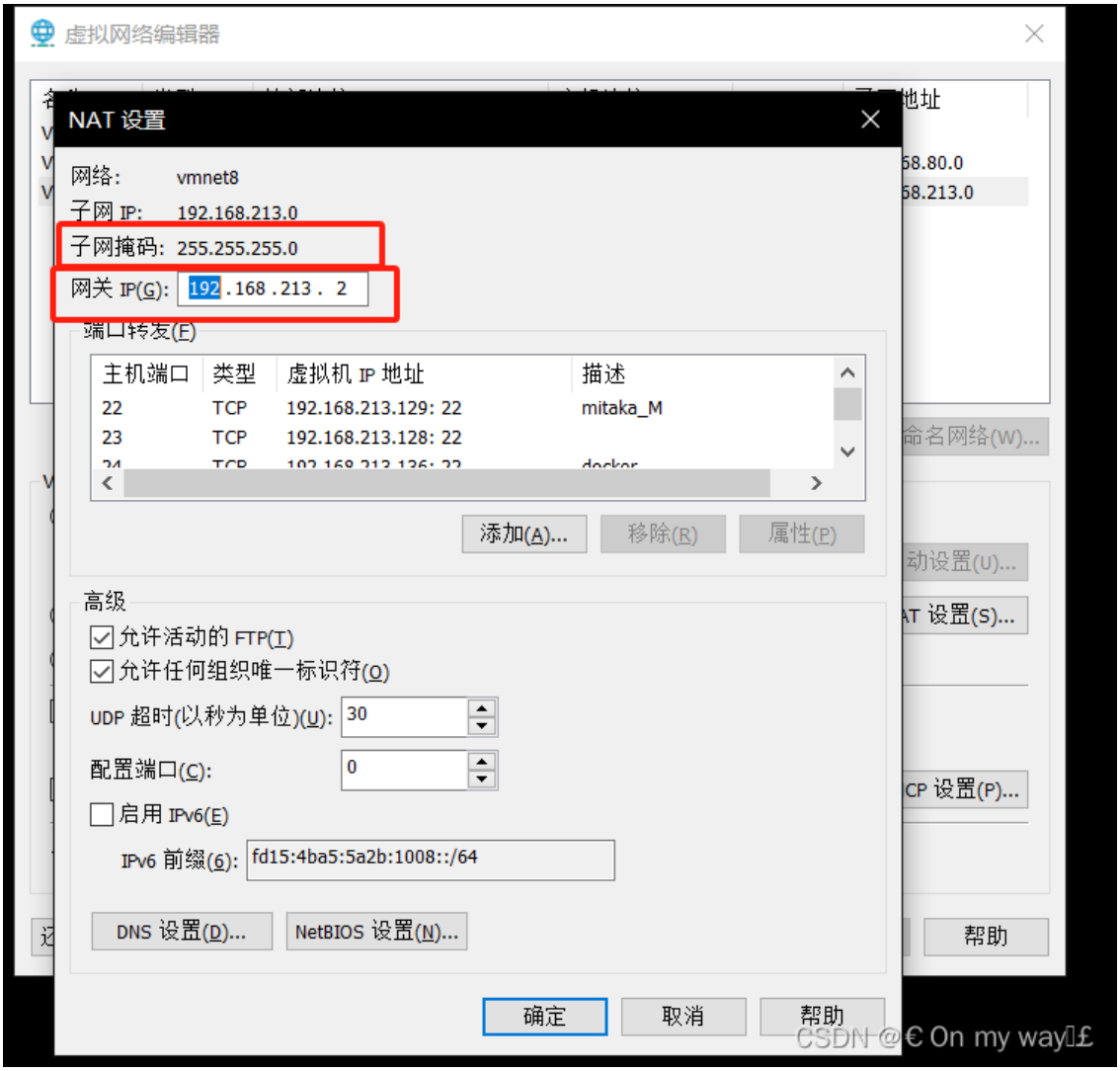

- systemctl restart network （重启网络服务，也就是重新加载配置文件即可生效）
-

```
[root@anible0284 network-scripts]# systemctl restart network
[root@anible0284 network-scripts]#
```

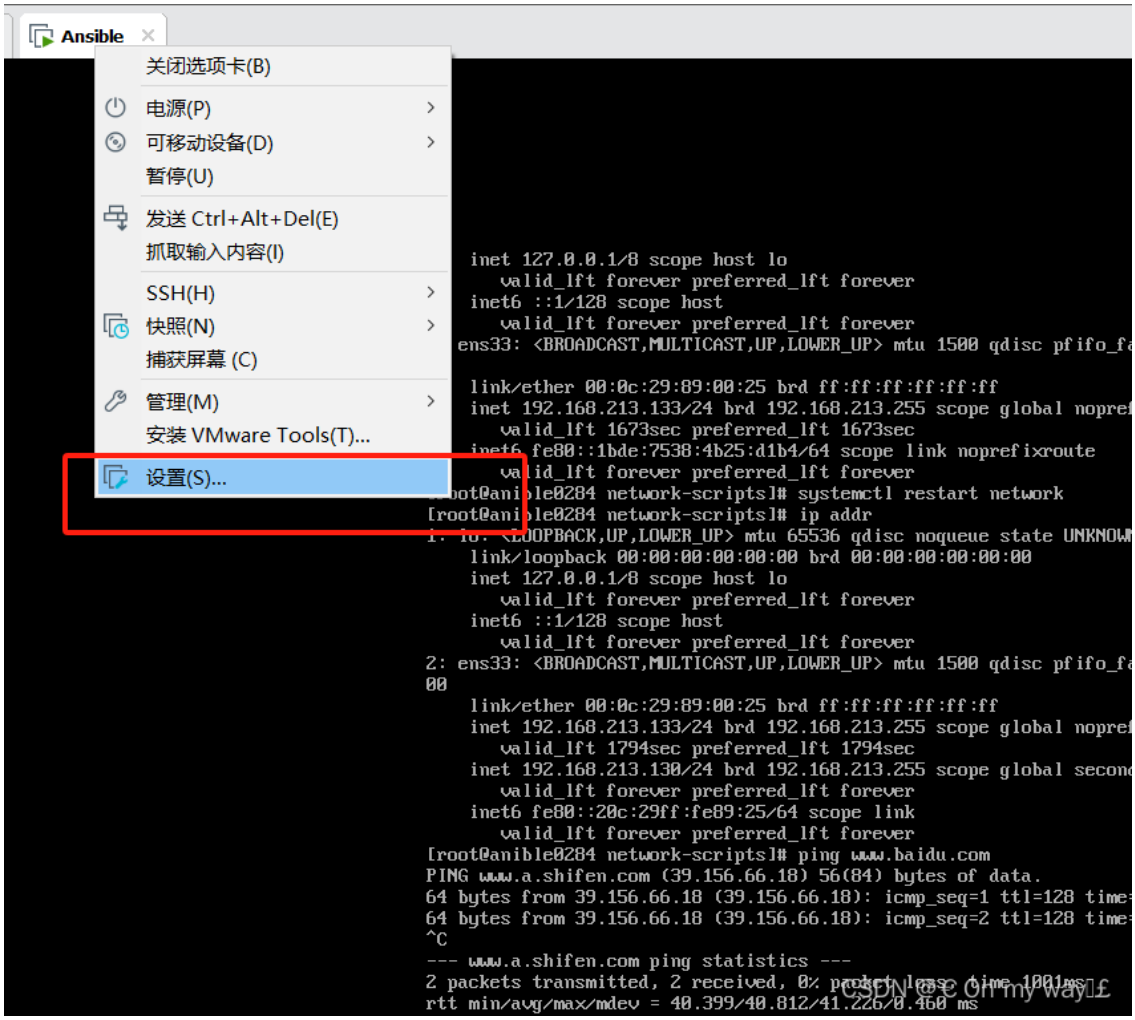
- 现在配置一个静态的IP,同样的vi ifcfg-ens33，修改这个配置文件。
- 1、将BOOTPROTO=DHCP改为static

  2、新增以下内容
  IPADDR=IP地址
  NETMASK=子网掩码
  GATEWAY=网关
  DNS1=网关/域

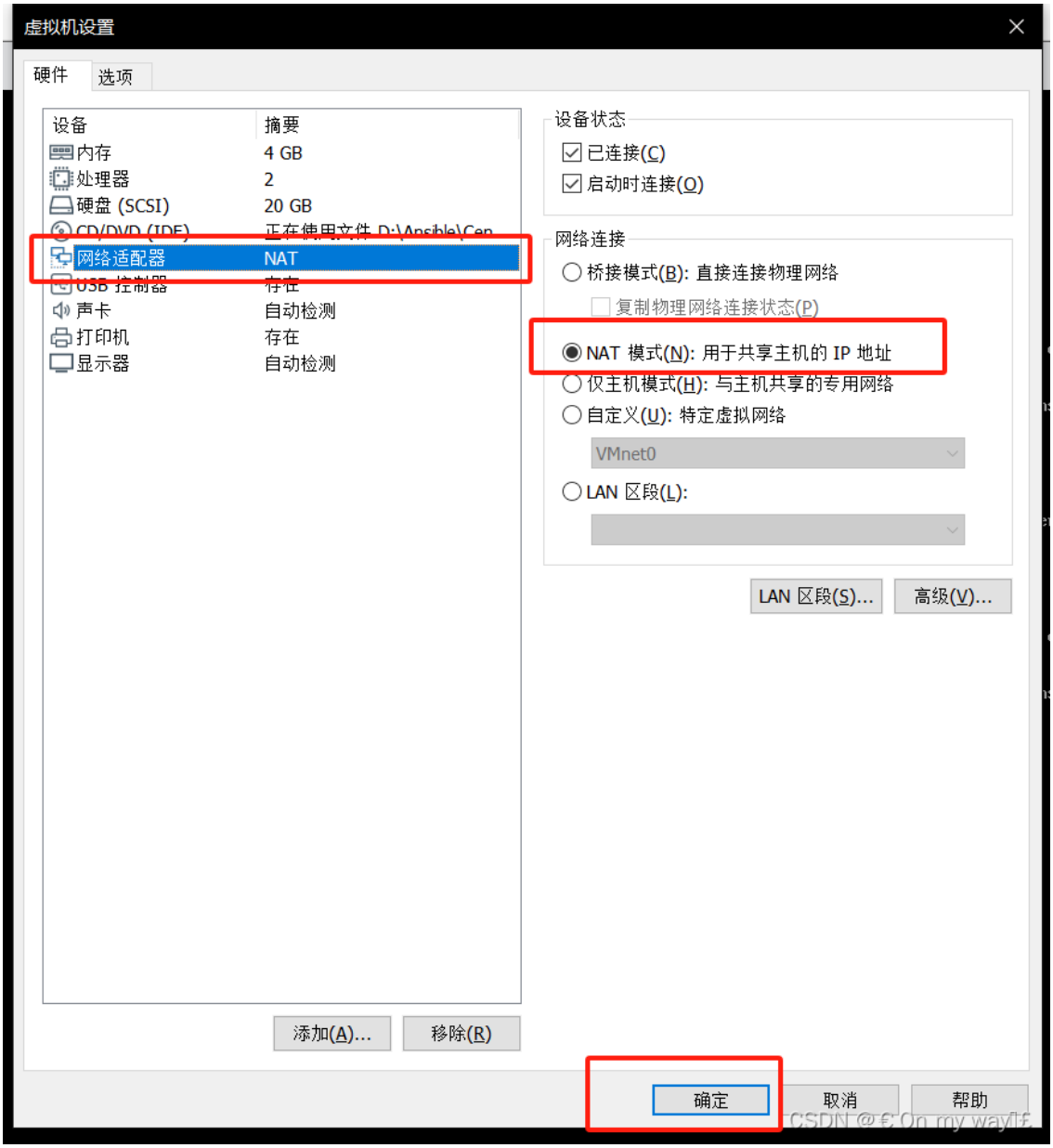
  IP地址为上面VMware配置的范围内任意一个不重复的IP
  子网掩码、网关在VMware的DHCP配置中查看，DNS1与我这里保持一致即可。
- 



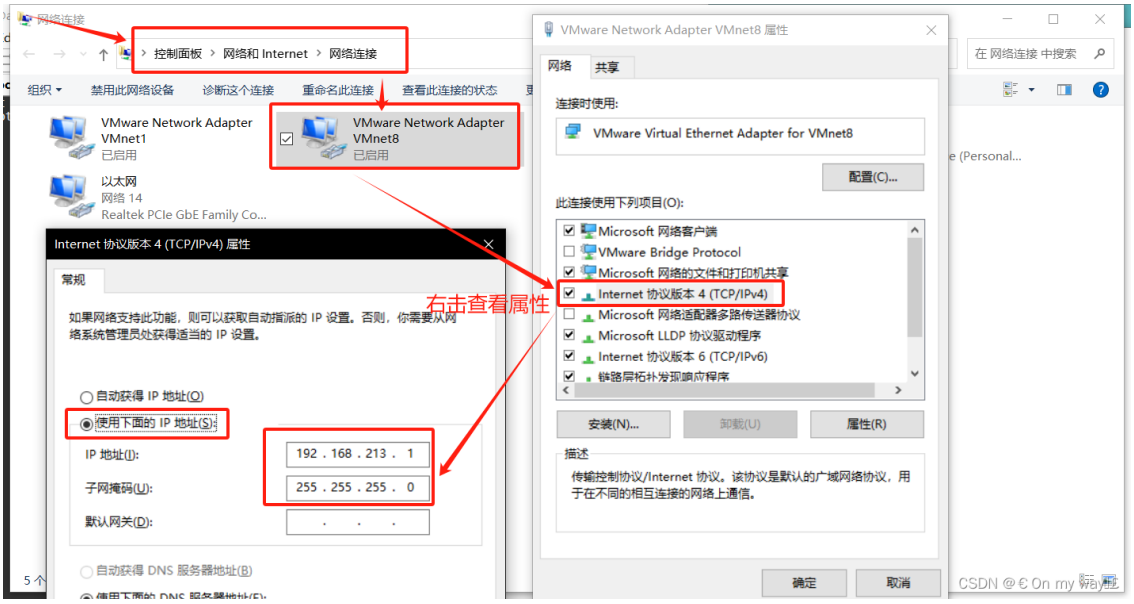
- systemctl restart network （重启网络服务，也就是重新加载配置文件即可生效）
- 然后设置你的虚拟机选择网络模式
-


Ansible
关闭选项卡(B)
电源(P)
可移动设备(D)
暂停(U)
发送 Ctrl+Alt+Del(E)
抓取输入内容(I)
SSH(H)
快照(N)
捕获屏幕 (C)
管理(M)
安装 VMware Tools(T)...
设置(S)...
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
ens33: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fa
link/ether 00:0c:29:89:00:25 brd ff:ff:ff:ff:ff:ff
inet 192.168.213.133/24 brd 192.168.213.255 scope global nopref
valid_lft 1673sec preferred_lft 1673sec
inet6 fe80::1bde:7538:4b25:d1b4/64 scope link noprefixroute
valid_lft forever preferred_lft forever
[root@anible0284 network-scripts]# systemctl restart network
[root@anible0284 network-scripts]# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN
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 pfifo_fa
00
link/ether 00:0c:29:89:00:25 brd ff:ff:ff:ff:ff:ff
inet 192.168.213.133/24 brd 192.168.213.255 scope global nopref
valid_lft 1794sec preferred_lft 1794sec
inet 192.168.213.130/24 brd 192.168.213.255 scope global second
valid_lft forever preferred_lft forever
inet6 fe80::20c:29ff:fe89:25/64 scope link
valid_lft forever preferred_lft forever
[root@anible0284 network-scripts]# ping www.baidu.com
PING www.a.shifen.com (39.156.66.18) 56(84) bytes of data.
64 bytes from 39.156.66.18 (39.156.66.18): icmp_seq=1 ttl=128 time=
64 bytes from 39.156.66.18 (39.156.66.18): icmp_seq=2 ttl=128 time=
^C
--- www.a.shifen.com ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1001ms
rtt min/avg/max/mdev = 40.399/40.812/41.226/0.460 ms
CSDN @C on my way

-



- 在你的物理本地电脑上配置，将VM8的IPV4协议配置（x.x.x.1）
-



- 最后在虚拟机上ping www.baidu.com成功即配置完成
-

```
[root@anible0284 ~]# ping www.baidu.com
PING www.a.shifen.com (39.156.66.18) 56(84) bytes of data.
64 bytes from 39.156.66.18 (39.156.66.18): icmp_seq=1 ttl=128 time=43.3 ms
64 bytes from 39.156.66.18 (39.156.66.18): icmp_seq=2 ttl=128 time=44.4 ms
64 bytes from 39.156.66.18 (39.156.66.18): icmp_seq=3 ttl=128 time=44.5 ms
64 bytes from 39.156.66.18 (39.156.66.18): icmp_seq=4 ttl=128 time=44.4 ms
64 bytes from 39.156.66.18 (39.156.66.18): icmp_seq=5 ttl=128 time=43.9 ms
^C
--- www.a.shifen.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 8081ms
rtt min/avg/max/mdev = 43.362/44.145/44.507/0.504 ms
[root@anible0284 ~]#
```


- 然后关闭你虚拟机的防火墙（systemctl stop firewalld 虚拟机操作），你的电脑就可以ping你的虚拟机了，Linux系统和windows系统自此就可以互相通信了。
-

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [版本 10.0.19045.3570]
(c) Microsoft Corporation。保留所有权利。

C:\Users\Administrator>ping 192.168.213.130
Ping 请求找不到主机 192.168.213.130。请检查该名称，然后重试。

C:\Users\Administrator>ping 192.168.213.130

正在 Ping 192.168.213.130 具有 32 字节的数据:
来自 192.168.213.130 的回复: 字节=32 时间<1ms TTL=64
来自 192.168.213.130 的回复: 字节=32 时间<1ms TTL=64
来自 192.168.213.130 的回复: 字节=32 时间<1ms TTL=64
来自 192.168.213.130 的回复: 字节=32 时间<1ms TTL=64

192.168.213.130 的 Ping 统计信息:
    数据包: 已发送 = 4, 已接收 = 4, 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

C:\Users\Administrator>
```


Apache

- 在虚拟机中安装Apache服务
-

```
安装命令
sudo yum -y install httpd httpd-manual mod_ssl mod_perl

安装完成后查看版本
httpd -v
```

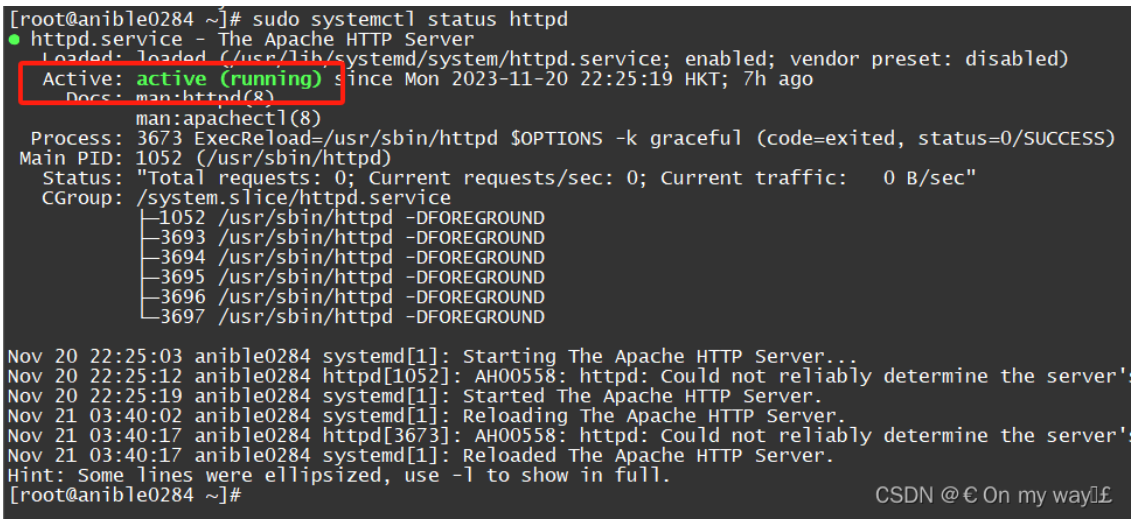
-

```
[root@anible0284 ~]# httpd -v
Server version: Apache/2.4.6 (CentOS)
Server built:   May 30 2023 14:01:11
[root@anible0284 ~]#
```

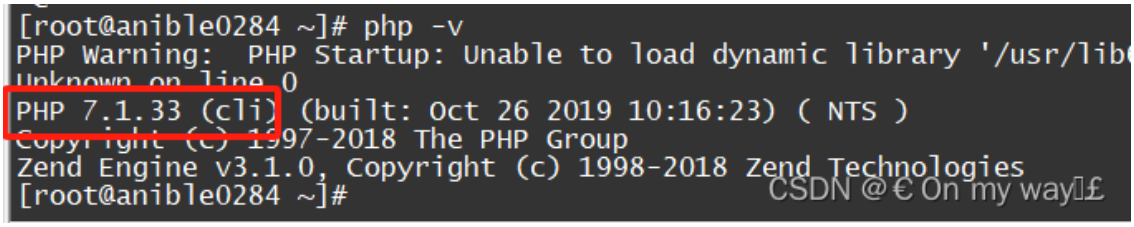

- 返回结果如上图，安装成功
-

```
启动刚安装的apache服务
sudo systemctl start httpd

设置开机自启动
sudo systemctl enable httpd

查看apache服务的状态
sudo systemctl status httpd
```

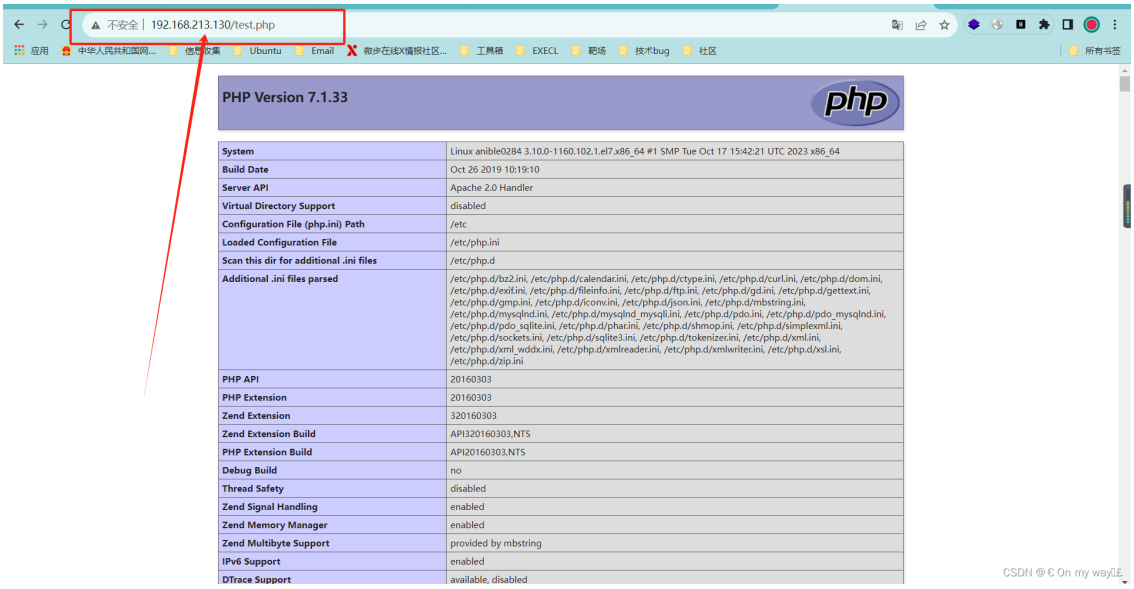
- 返回状态如下为启动成功

- 

PHP

- 添加源
- ```
  --添加源--

  sudo yum install -y \
  https://repo.ius.io/ius-release-el7.rpm \
  https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm

  sudo rpm -Uvh https://mirror.webtatic.com/yum/el7/webtatic-release.rpm

  --安装PHP--

  sudo yum -y install php
  ```
- 查看PHP的版本
- PHP -v
- 

- 安装完Apache之后，会在虚拟机中生成这个路径/var/www/html/，这个路径下就是你网站的根目录，所有的网页项目文件就放在这个文件下，打开apache网站即可访问。
- ```
  cd /var/www/html/      到这个目录下
  touch test.php         创建一个PHP文件
  vim test.php           编辑这个文件


  文件内写入以下配置详细信息展示，保存退出
  <?php
  phpinfo();
  ?>
  ```
- 依次执行，然后重启apache服务

- ```
  sudo systemctl restart httpd
  ```
- 在windows浏览器上访问你的网页，`http://`虚拟机IP/文件路径（文件路径是以/var/www/html/为起点）
- 

- 出现这个页面即为成功

MYSQL

- 更新YUM源，安装MySQL

  ```
  wget http://dev.mysql.com/get/mysql57-community-release-el7-10.noarch.rpm
  sudo yum install -y mysql57-community-release-el7-10.noarch.rpm
  sudo yum install -y mysql-community-server --nogpgcheck

  安装完成查看MySQL版本
  mysql -V
  ```
- 返回下面的结果即为安装成功
- ```
  [root@anible0284 html]# mysql -V
  mysql  Ver 14.14 Distrib 5.7.44, for Linux (x86_64) using  EditLine wrapper
  [root@anible0284 html]#
  ```
- 设置开机自启

  ```
  sudo systemctl start mysqld
  sudo systemctl enable mysqld
  sudo systemctl daemon-reload

  获取MySQL的初始密码
  sudo grep "password" /var/log/mysqld.log

  运行以下命令配置
  mysql_secure_installation

  Enter password for user root: #输入上一步获取的root用户初始密码。
  ```

```
The existing password for the user account root has expired. Please set a
new password.

New password: #输入新密码，长度为8至30个字符，必须同时包含大小写英文字母、数字和特殊符
号。特殊符号可以是()` ~!@#$%^&*-+=|{}[]:;‘<>,.?/

Re-enter new password: #重复输入新密码。
The 'validate_password' plugin is installed on the server.
The subsequent steps will run with the existing configuration
of the plugin.
Using existing password for root.

Estimated strength of the password: 100
Change the password for root ? ((Press y|Y for Yes, any other key for No) :Y
#按Y，并再次输入上步已设置的密码。

New password: #再次输入新密码。

Re-enter new password: #重复输入新密码。

Estimated strength of the password: 100
Do you wish to continue with the password provided?(Press y|Y for Yes, any
other key for No) :Y #按Y使用新密码。


By default, a MySQL installation has an anonymous user,
allowing anyone to log into MySQL without having to have
a user account created for them. This is intended only for
testing, and to make the installation go a bit smoother.
You should remove them before moving into a production
environment.

Remove anonymous users? (Press y|Y for Yes, any other key for No) : Y  #是否
删除匿名用户，输入Y
Success.

By default, MySQL comes with a database named 'test' that
anyone can access. This is also intended only for testing,
and should be removed before moving into a production
environment.

Remove test database and access to it? (Press y|Y for Yes, any other key for
No) : Y #是否删除test库和对它的访问权限，输入Y
 - Dropping test database...
Success.

 - Removing privileges on test database...
Success.

Reloading the privilege tables will ensure that all changes
made so far will take effect immediately.

Reload privilege tables now? (Press y|Y for Yes, any other key for No) : Y #
是否重新加载授权表，输入Y
Success.
```

```
All done!
```

- 至此，LAMP搭建就完成了。接下来就是在/var/www/html下编写自己的PHP网站项目咯。