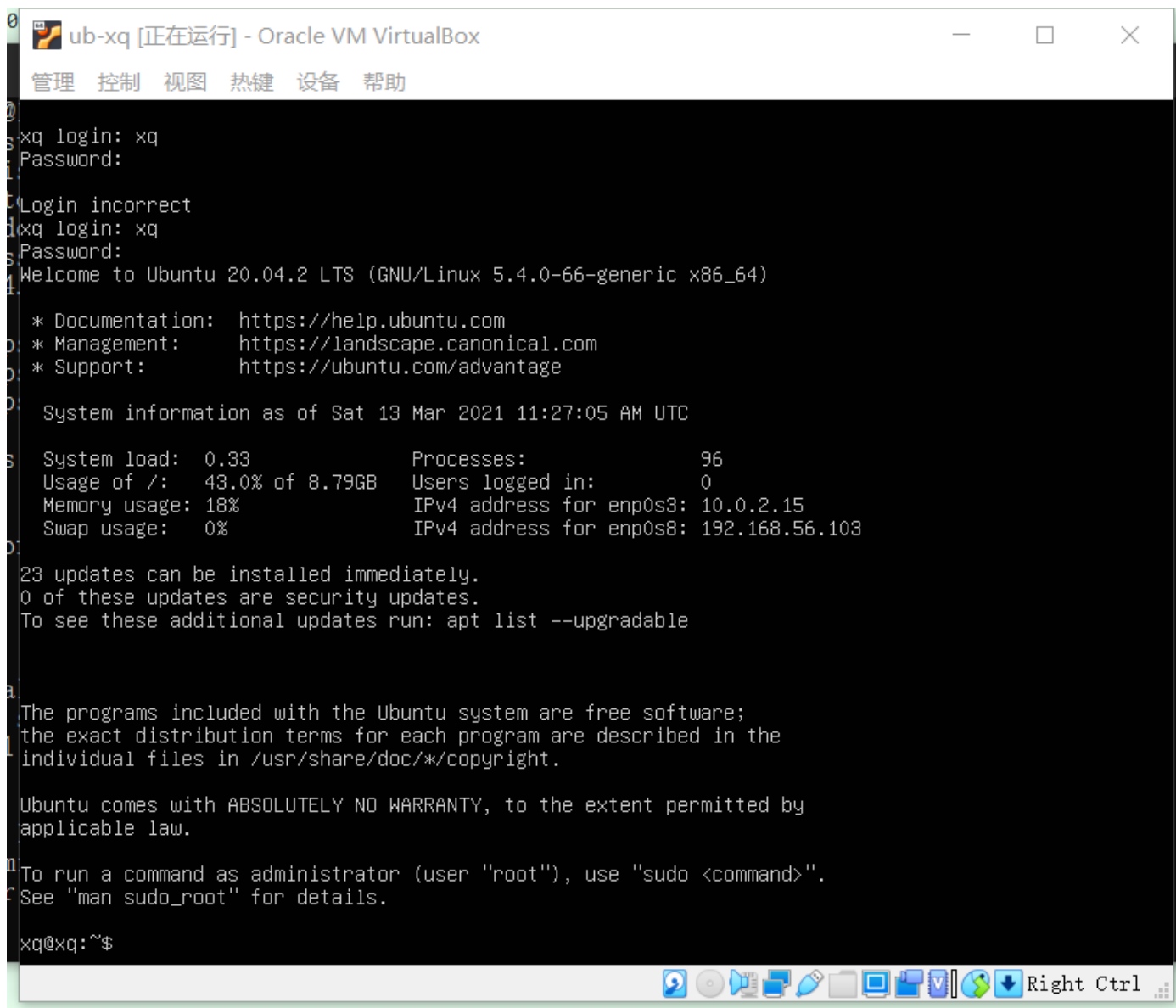


# 第一次试验

## 实验目的：无人值守虚拟机安装

### 试验过程：

- 在Ubuntu官网下载好ubuntu-20.04.2-live-server-amd64.iso，并且导入虚拟机手动安装好一个系统



```
ub-xq [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
xq login: xq
Password:
Login incorrect
xq login: xq
Password:
Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 5.4.0-66-generic x86_64)

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

System information as of Sat 13 Mar 2021 11:27:05 AM UTC

System load: 0.33          Processes: 96
Usage of /:  43.0% of 8.79GB Users logged in: 0
Memory usage: 18%         IPv4 address for enp0s3: 10.0.2.15
Swap usage:  0%           IPv4 address for enp0s8: 192.168.56.103

23 updates can be installed immediately.
0 of these updates are security updates.
To see these additional updates run: apt list --upgradable

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.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

xq@xq:~$
```

- 在cmd界面ssh刚装好的虚拟机

```
xq@xq: ~  
C:\Users\Lenovo>ssh xq@192.168.56.103  
The authenticity of host '192.168.56.103 (192.168.56.103)' can't be established.  
ECDSA key fingerprint is SHA256:bhHUz5gt2JcH4ftq/7kzxDSQ0ElxqUdTg+/6lekwl8.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added '192.168.56.103' (ECDSA) to the list of known hosts.  
xq@192.168.56.103's password:  
Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 5.4.0-66-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:       https://ubuntu.com/advantage  
  
System information as of Sat 13 Mar 2021 11:37:45 AM UTC  
  
System load:  0.08      Processes:            103  
Usage of /:   43.1% of 8.79GB   Users logged in:     1  
Memory usage: 20%      IPv4 address for enp0s3: 10.0.2.15  
Swap usage:   0%          IPv4 address for enp0s8: 192.168.56.103  
  
23 updates can be installed immediately.  
0 of these updates are security updates.  
To see these additional updates run: apt list --upgradable  
  
Last login: Sat Mar 13 11:27:06 2021  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
xq@xq: ~$
```

- 切换到root权限并且获取autoinstall-user-data文件

```
root@xq: ~  
Usage of /:   43.1% of 8.79GB   Users logged in:     1  
Memory usage: 20%      IPv4 address for enp0s3: 10.0.2.15  
Swap usage:   0%          IPv4 address for enp0s8: 192.168.56.103  
  
23 updates can be installed immediately.  
0 of these updates are security updates.  
To see these additional updates run: apt list --upgradable  
  
Last login: Sat Mar 13 11:27:06 2021  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
xq@xq: ~$ cat /var/log/installer/autoinstall-user-data  
cat: /var/log/installer/autoinstall-user-data: Permission denied  
xq@xq: ~$ sudo su -  
[sudo] password for xq:  
root@xq: ~# cat /var/log/installer/autoinstall-user-data  
#cloud-config  
autoinstall:  
  apt:  
    geoip: true  
    preserve_sources_list: false  
    primary:  
      - arches: [amd64, i386]  
        uri: http://cn.archive.ubuntu.com/ubuntu  
      - arches: [default]  
        uri: http://ports.ubuntu.com/ubuntu-ports  
  identity: {hostname: xq, password: $6$lVrS5nC.FoK1nTJx$Nu/uRQYyfqGL0wnn/seofN3gQgZguaE4HJtiItxCws8MIVqdU.nNjH0gXaGaoip
```

```
C:\Windows\system32\cmd.exe

type: lvm_volgroup
id: lvm_volgroup-0
- {name: ubuntu-lv, volgroup: lvm_volgroup-0, size: 9659482112B, preserve: false,
  type: lvm_partition, id: lvm_partition-0}
- {fstype: ext4, volume: lvm_partition-0, preserve: false, type: format, id: format-1}
- {device: format-1, path: /, type: mount, id: mount-1}
- {device: format-0, path: /boot, type: mount, id: mount-0}

version: 1
root@xq:~# exit
logout
xq@xq:~$ sudo chown xq:xq /var/log/installer/autoinstall-user-data
xq@xq:~$ exit
logout
Connection to 192.168.56.103 closed.

C:\Users\Lenovo>cd Downloads
```

- 对比老师所给的user-data文件修改下载到本地的autoinstall-user-data文件

```
version: 2
ssh:
  allow-pw: true
  authorized-keys: []
  install-server: true
storage:
  config:
    - {ptable: gpt, path: /dev/sda, wipe: superblock,
      preserve: false, name: '', grub_device: true, type: disk, id: disk-sda}
    - {device: disk-sda, size: 1MB, flag: bios_grub, number: 1, preserve: false,
      grub_device: false, type: partition, id: partition-0}
    - {device: disk-sda, size: 1GB, wipe: superblock, flag: '', number: 2,
      preserve: false, grub_device: false, type: partition, id: partition-1}
    - {fstype: ext4, volume: partition-1, preserve: false, type: format, id: format-1}
    - {device: disk-sda, size: -1, wipe: superblock, flag: '', number: 3,
      preserve: false, grub_device: false, type: partition, id: partition-2}
  - name: ubuntu-vg
    devices: [partition-2]
    preserve: false
    type: lvm_volgroup
    id: lvm_volgroup-0
  - {name: ubuntu-lv, volgroup: lvm_volgroup-0, size: -1, preserve: false,
    type: lvm_partition, id: lvm_partition-0}
  - {fstype: ext4, volume: lvm_partition-0, preserve: false, type: format, id: format-1}
  - {device: format-1, path: /, type: mount, id: mount-1}
  - {device: format-0, path: /boot, type: mount, id: mount-0}

version: 1
```

```
! autoinstall-user-data X
C:\Users\Lenovo\Downloads> ! autoinstall-user-data
27 - {ptable: gpt, path: /dev/sda, wipe: superblock,
28   preserve: false, name: '', grub_device: true, type: disk, id: disk-sda}
29 - {device: disk-sda, size: 1MB, flag: bios_grub, number: 1, preserve: false,
30   grub_device: false, type: partition, id: partition-0}
31 - {device: disk-sda, size: 1GB, wipe: superblock, flag: '', number: 2,
32   preserve: false, grub_device: false, type: partition, id: partition-1}
33 - {fstype: ext4, volume: partition-1, preserve: false, type: format, id: format-0}
34 - {device: disk-sda, size: -1, wipe: superblock, flag: '', number: 3,
35   preserve: false, grub_device: false, type: partition, id: partition-2}
36 - name: ubuntu-vg
37   devices: [partition-2]
38   preserve: false
39   type: lvm_volgroup
40   id: lvm_volgroup-0
41 - {name: ubuntu-lv, volgroup: lvm_volgroup-0, size: -1, preserve: false,
42   type: lvm_partition, id: lvm_partition-0}
43 - {fstype: ext4, volume: lvm_partition-0, preserve: false, type: format, id: format-1}
44 - {device: format-1, path: /, type: mount, id: mount-1}
45 - {device: format-0, path: /boot, type: mount, id: mount-0}
46 version: 1
47
```

- 将改好的autoinstall-user-data文件和新建的meta-data空文件传输到虚拟机中，  
图示前面两步：在当前目录下打开Git bush面板输入指令

```
MINGW64:/d/share

Lenovo@LAPTOP-00DKVTNE MINGW64 /d/share
$ scp meta-data xq@192.168.56.103:/home/xq
xq@192.168.56.103's password:
meta-data                                100%   0      0.0KB/s   00:00

Lenovo@LAPTOP-00DKVTNE MINGW64 /d/share
$ scp autoinstall-user-data xq@192.168.56.103:/home/xq
xq@192.168.56.103's password:
autoinstall-user-data                    100% 1856    283.0KB/s   00:00

Lenovo@LAPTOP-00DKVTNE MINGW64 /d/share
$ scp xq@192.168.56.103:/home/xq/xq.iso ./
xq@192.168.56.103's password:
xq.iso                                   100% 364KB   30.1MB/s   00:00

Lenovo@LAPTOP-00DKVTNE MINGW64 /d/share
$
```

- 下载cloud-image-utils插件并且合成iso文件
- 合成iso文件成功之后记得pwd查看文件所在位置方便物理主机下载到本地

```

su: Authentication failure
xq@xq:~$ sudo apt install cloud-image-utils
[sudo] password for xq:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  distro-info genisoimage ibverbs-providers libboost-iostreams1.71.0 libboost-thread1.71.0
  libibverbs1 libiscsi7 libnl-route-3-200 librados2 librbd1 librdmacm1 qemu-block-extra qemu-utils
  sharutils
Suggested packages:
  mtools shunit2 wodim cdrkit-doc debootstrap sharutils-doc bsd-mailx | mailx
The following NEW packages will be installed:
  cloud-image-utils distro-info genisoimage ibverbs-providers libboost-iostreams1.71.0
  libboost-thread1.71.0 libibverbs1 libiscsi7 libnl-route-3-200 librados2 librbd1 librdmacm1
  qemu-block-extra qemu-utils sharutils
0 upgraded, 15 newly installed, 0 to remove and 23 not upgraded.
Need to get 7,420 kB of archives.
After this operation, 35.3 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://cn.archive.ubuntu.com/ubuntu focal/main amd64 distro-info amd64 0.23ubuntu1 [17.1 kB]
Get:2 http://cn.archive.ubuntu.com/ubuntu focal/main amd64 genisoimage amd64 9:1.1.11-3.1ubuntu1 [33
0 kB]
Get:3 http://cn.archive.ubuntu.com/ubuntu focal/main amd64 libnl-route-3-200 amd64 3.4.0-1 [149 kB]
Get:4 http://cn.archive.ubuntu.com/ubuntu focal/main amd64 libibverbs1 amd64 28.0-1ubuntu1 [53.6 kB]
Get:5 http://cn.archive.ubuntu.com/ubuntu focal/main amd64 ibverbs-providers amd64 28.0-1ubuntu1 [23
2 kB]
13% [5 ibverbs-providers 121 kB/232 kB 52%] 37.4 kB/s 3min 0s^
14% [5 ibverbs-providers 210 kB/232 kB 90%] 37.4 kB/s 2min 58s_

```

```

cp: cannot stat 'autoinstall-user-data': No such file or directory
autoinstall-user-data: failed to copy
xq@xq:~$ cloud-localds ./xq.iso autoinstall-user-data meta-data
xq@xq:~$ pwd
/home/xq
xq@xq:~$ _

```

- 将生成的iso文件传输下载到本地的目录下
- 下图所示的第三条指令显示传输下载到物理主机的d盘的share文件夹




```
MINGW64:/d/share

Lenovo@LAPTOP-00DKVTNE MINGW64 /d/share
$ scp meta-data xq@192.168.56.103:/home/xq
xq@192.168.56.103's password:
meta-data                                100%   0      0.0KB/s   00:00

Lenovo@LAPTOP-00DKVTNE MINGW64 /d/share
$ scp autoinstall-user-data xq@192.168.56.103:/home/xq
xq@192.168.56.103's password:
autoinstall-user-data                    100% 1856    283.0KB/s   00:00

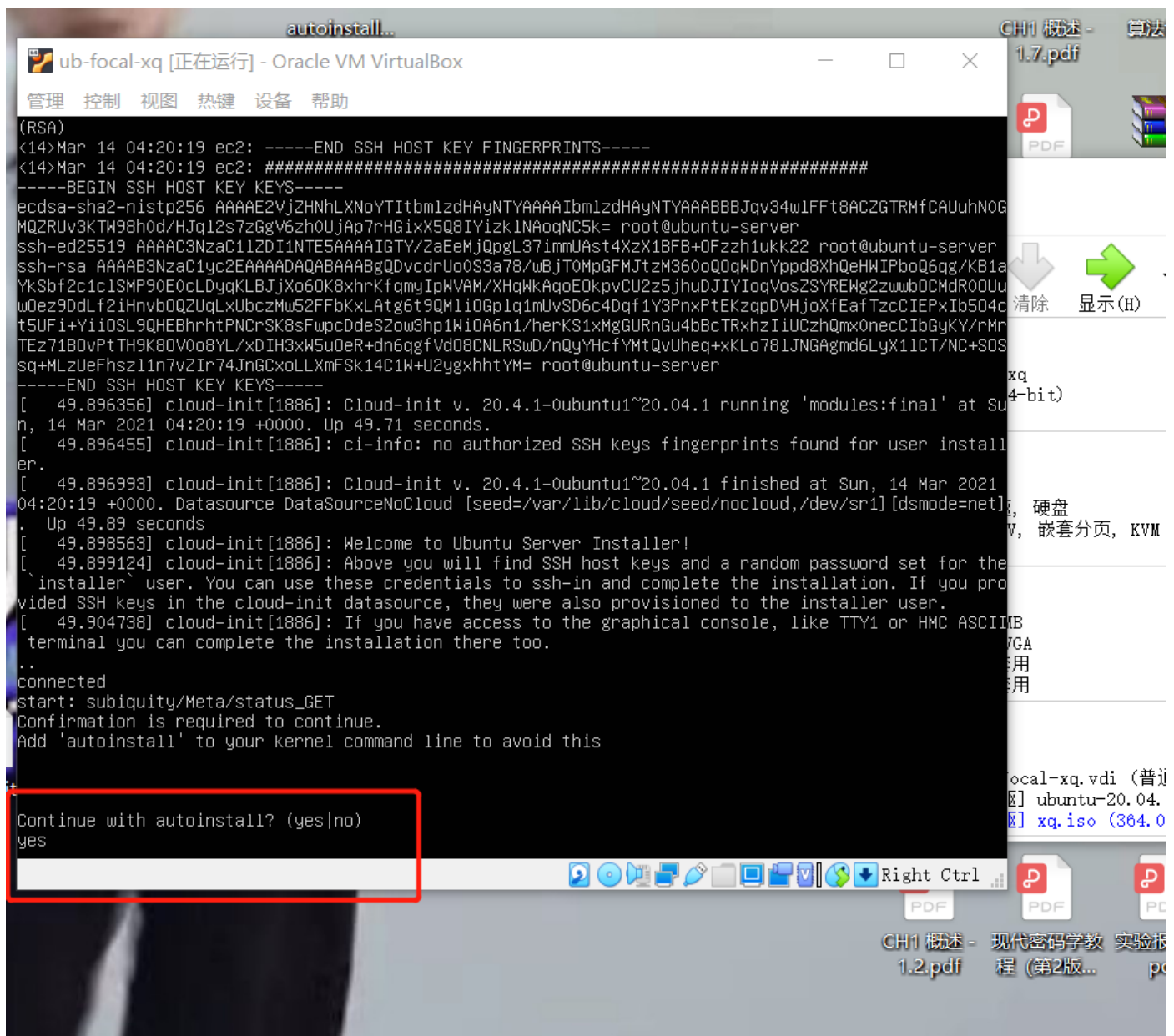
Lenovo@LAPTOP-00DKVTNE MINGW64 /d/share
$ scp xq@192.168.56.103:/home/xq/xq.iso ./
xq@192.168.56.103's password:
xq.iso                                   100% 364KB   30.1MB/s   00:00

Lenovo@LAPTOP-00DKVTNE MINGW64 /d/share
$
```

 autoinstall-user-data	2021/3/14 10:27	文件	2 KB
 meta-data	2021/3/14 11:40	文件	0 KB
 xq.iso	2021/3/14 12:08	光盘映像文件	364 KB

- 挂载生成的iso文件、原本的iso文件，无人值守安装虚拟机



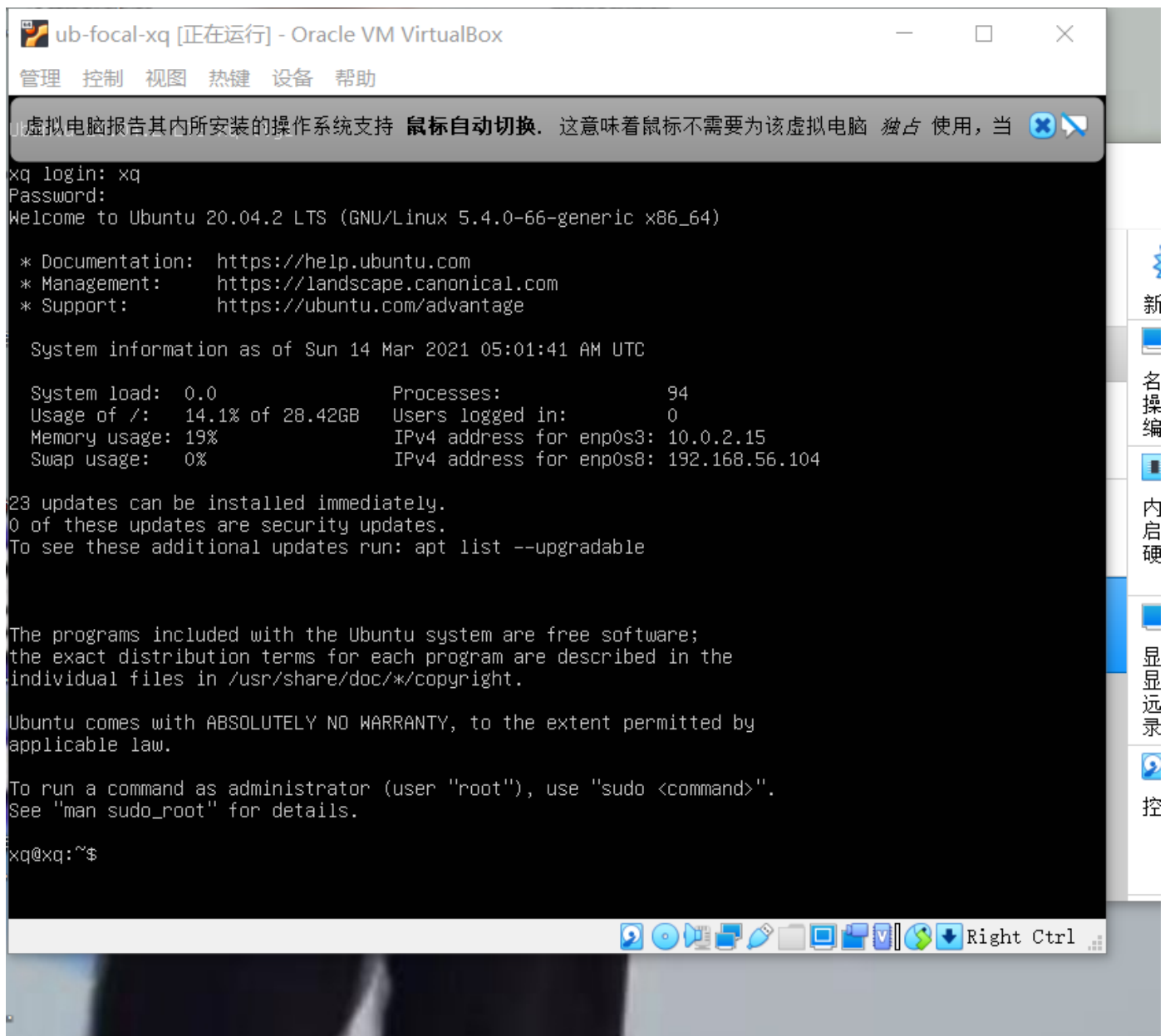




```

ubuntu 20.04.2 LTS xq tty1
虚拟电脑报告其所安装的操作系统支持 鼠标自动切换。这意味着鼠标不需要为该虚拟电脑 独占 使用，当
xq login: [ 36.221825] cloud-init[1415]: Generating locales (this might take a while)...
[ 37.984552] cloud-init[1415]: en_US.UTF-8... done
[ 37.984643] cloud-init[1415]: Generation complete.
[ 38.297647] cloud-init[1415]: Cloud-init v. 20.4.1-0ubuntu1~20.04.1 running 'modules:config' at S
un, 14 Mar 2021 04:26:44 +0000. Up 36.06 seconds.
ci-info: no authorized SSH keys fingerprints found for user xq.
x14>Mar 14 04:26:47 ec2:
x14>Mar 14 04:26:47 ec2: #####
x14>Mar 14 04:26:47 ec2: -----BEGIN SSH HOST KEY FINGERPRINTS-----
x14>Mar 14 04:26:47 ec2: 1024 SHA256:rbQcUeEssNxdFI/i020y9QuWXIWpQN33ejX879DeimA root@xq (DSA)
x14>Mar 14 04:26:47 ec2: 256 SHA256:2IaDcaoJGrUihomU3+3HC040V3rgXwz4GgKdM26Gukw root@xq (ECDSA)
x14>Mar 14 04:26:47 ec2: 256 SHA256:1FrEWI09XPAebol0662B4moxVjDG/wNDMtijRFRy0v8 root@xq (ED25519)
x14>Mar 14 04:26:47 ec2: 3072 SHA256:eXephzMQ44qj1I3zmj0wo8HAKQcjU9fqEObkKgrS3o root@xq (RSA)
x14>Mar 14 04:26:47 ec2: -----END SSH HOST KEY FINGERPRINTS-----
x14>Mar 14 04:26:47 ec2: #####
-----BEGIN SSH HOST KEY KEYS-----
ecdsa-sha2-nistp256 AAAAE2VjZHNhLXNoYTItbmlzdHAyNTYAAAAIbmlzdHAyNTYAAABBBLoEoD19d/NrUqM3HJ5iQhPp2xZA
heSg1vbLYsjN0Pf/ttFIELkCItQMoBtRteaj04CLQe+1GhmC003gvEc2wmc= root@xq
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIORM1BwEi4R9Iukg8A0xe2BMHsRGDKkEGxaVfYLLEeU+ root@xq
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQGDJX6dSvX5hld8ot8PFqg9FJGbcqJYU0gSrTxKgHsIlyG2kx18M1aRoR0cYX5ML
gW+sqRYM1fHwCh1BQS6PE200/4s3BWB114cu2ShUImo0YuJBISY7R+F16C9/8QR/uRuECaTcKUG+pBEqLHaeD8J3HYS0ZHCoxhe
q98CBdVq3ZQ1yBG4PdOYMBDCaLym9Ve2FcanbLDzUpLGQlCftzFLno/cn+oocEXkg+HCd+RUyxfBhnBDaYdak7FT+awSZ+pY+0TJ
LOEdTjuTRc3nH3MaEhv1c402rj/R5YwaFJJTU0zk+PqCp6uBUKIMT9CwCf7sYTX/z7/e45Jymx08TnXvsF/PwYiLrum/kbw4mSAk
Pq9PtHMnAgdm+G2xq19MskvZSR7xajh6yFufWsz+1VmPkfd3wYubMA0JTsS45MQDSmDrQH7q51vEPnyibLwixxmh7EDmo+UMzxBx
/wh//Wxo6uMeQhEksEG1yQ6QM1/MQHqMbCXY1Th29je6bWltFc= root@xq
-----END SSH HOST KEY KEYS-----
[ 38.905795] cloud-init[1457]: Cloud-init v. 20.4.1-0ubuntu1~20.04.1 running 'modules:final' at Su
n, 14 Mar 2021 04:26:47 +0000. Up 38.73 seconds.
[ 38.905918] cloud-init[1457]: ci-info: no authorized SSH keys fingerprints found for user xq.
[ 38.906000] cloud-init[1457]: Cloud-init v. 20.4.1-0ubuntu1~20.04.1 finished at Sun, 14 Mar 2021
04:26:47 +0000. Datasource DataSourceNone. Up 38.90 seconds
[ 38.906075] cloud-init[1457]: 2021-03-14 04:26:47,834 - cc_final_message.py[WARNING]: Used fallback
datasource
xq login:

```



- 验证

```
xq@xq: ~  
C:\Users\Lenovo>ssh xq@192.168.56.104  
The authenticity of host '192.168.56.104 (192.168.56.104)' can't be established.  
ECDSA key fingerprint is SHA256:2IaDcaoJGrUihoMU3+3HC040V3rgXwz4GgKdMZ6Gukw.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added '192.168.56.104' (ECDSA) to the list of known hosts.  
xq@192.168.56.104's password:  
Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 5.4.0-66-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:       https://ubuntu.com/advantage  
  
System information as of Sun 14 Mar 2021 05:03:05 AM UTC  
  
System load:  0.0          Processes:            105  
Usage of /:   14.1% of 28.42GB  Users logged in:    1  
Memory usage: 20%          IPv4 address for enp0s3: 10.0.2.15  
Swap usage:   0%           IPv4 address for enp0s8: 192.168.56.104  
  
23 updates can be installed immediately.  
0 of these updates are security updates.  
To see these additional updates run: apt list --upgradable  
  
Last login: Sun Mar 14 05:01:42 2021  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
xq@xq: ~$
```

实验完成 喜大普奔

## 出现的问题&解决

- 前两次手动安装Ubuntu20.04时无法获取ip地址
  - 解决方式：应该在导入iso文件之前设置双网卡
- 将下载得到的autoinstall-user-data文件传输到虚拟机中还尝试了建立共享文件夹，并在共享文件夹中放入autoinstall-user-data文件和meta-data文件，但是在虚拟机中不能找到相关的文件，合成iso文件无果，查看虚拟机中的共享文件夹需要root权限，需要加强插件等等，学艺不精没有行通
- 刚开始Git bush两个文件到虚拟机中时报错提示不能找到文件
  - 解决方式：在文件所在的目录下Git bush
- 在提问时看到语雀上面的相关提问，所以提前将autoinstall-user-data换源。安装速度变快；
  - 参考链接：<http://mirrors.aliyun.com/ubuntu/>  
<https://mirrors.aliyun.com/ubuntu-ports/>
- 传输两个文件到虚拟机参考：[https://blog.csdn.net/Brave\\_heart4pzj/article/details/102667985](https://blog.csdn.net/Brave_heart4pzj/article/details/102667985)