自制 vagrant box 教程

目录

part 1 制作 ubuntu box

1.1 前置说明

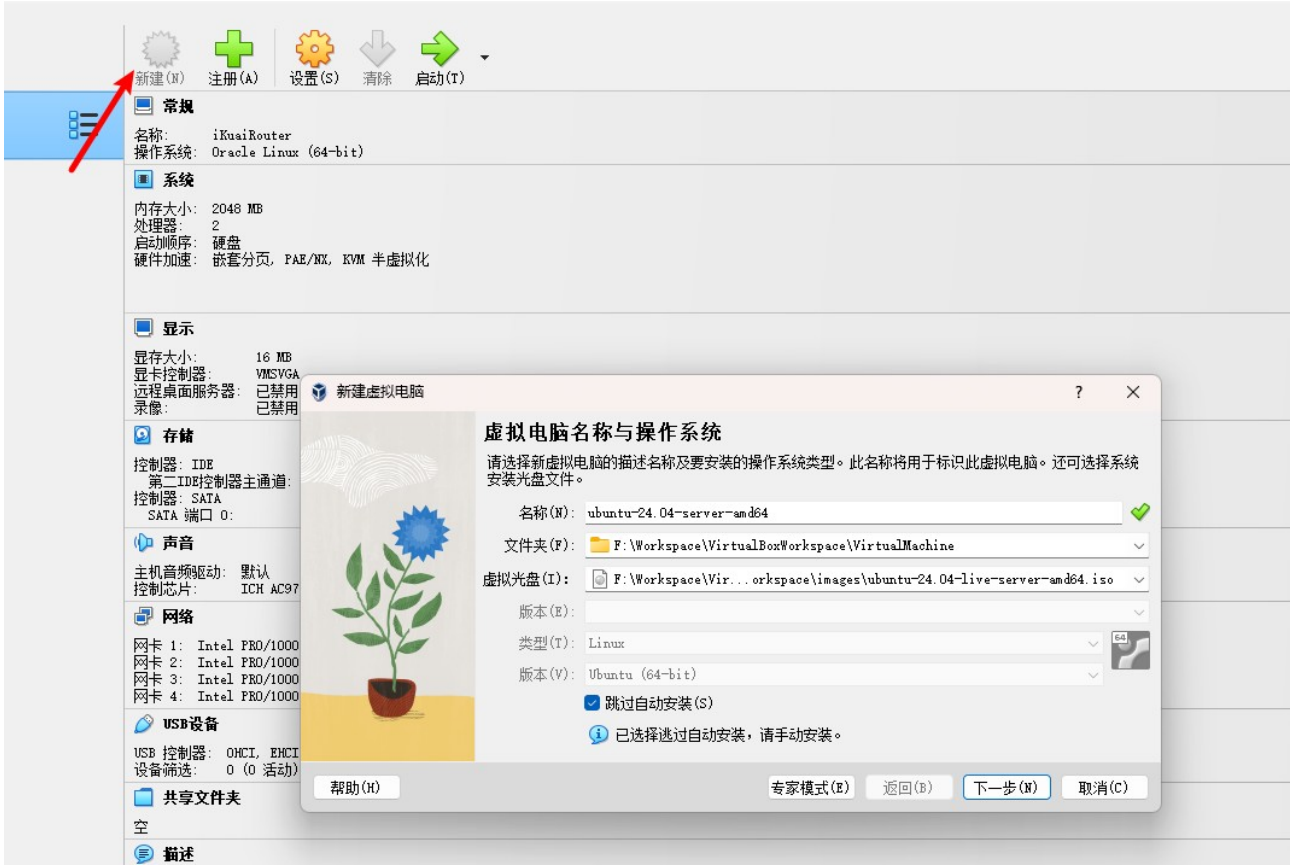
虚拟机：VirtualBox

镜像：ubuntu-24.04-live-server-amd64.iso

2.1 新建 VM 虚拟机

2.1.1 新建虚拟机

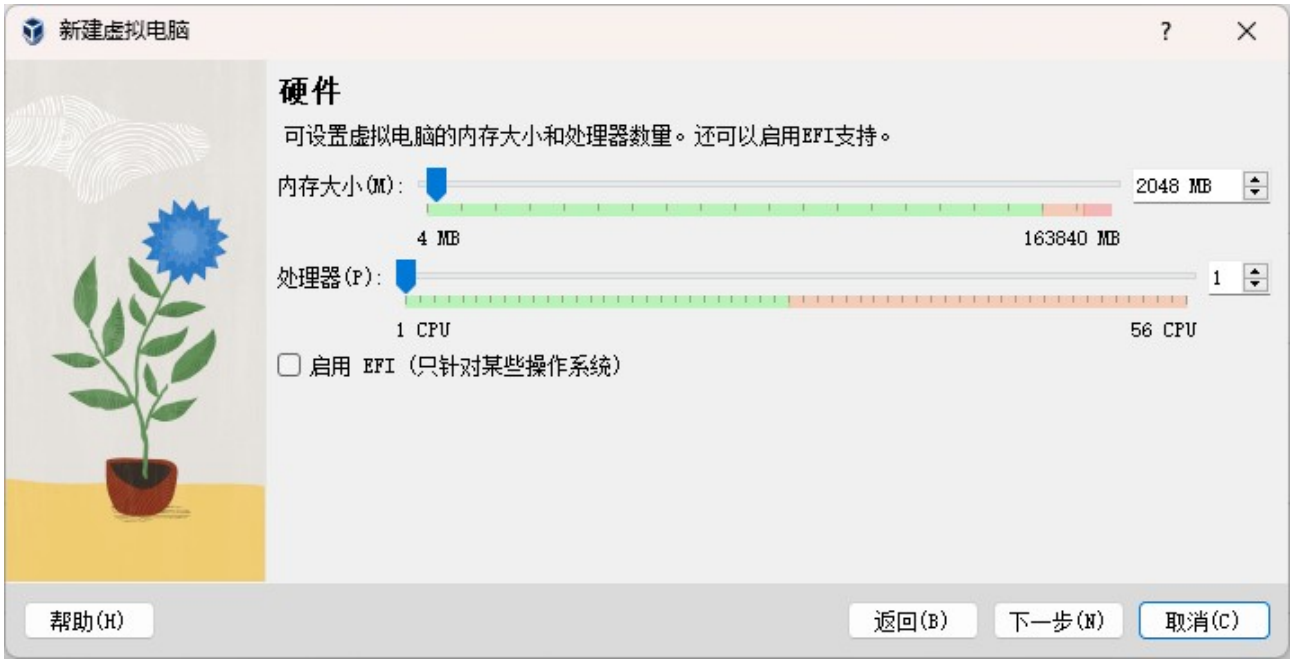
虚拟机名称：



2.1.2 配置内存和 CPU

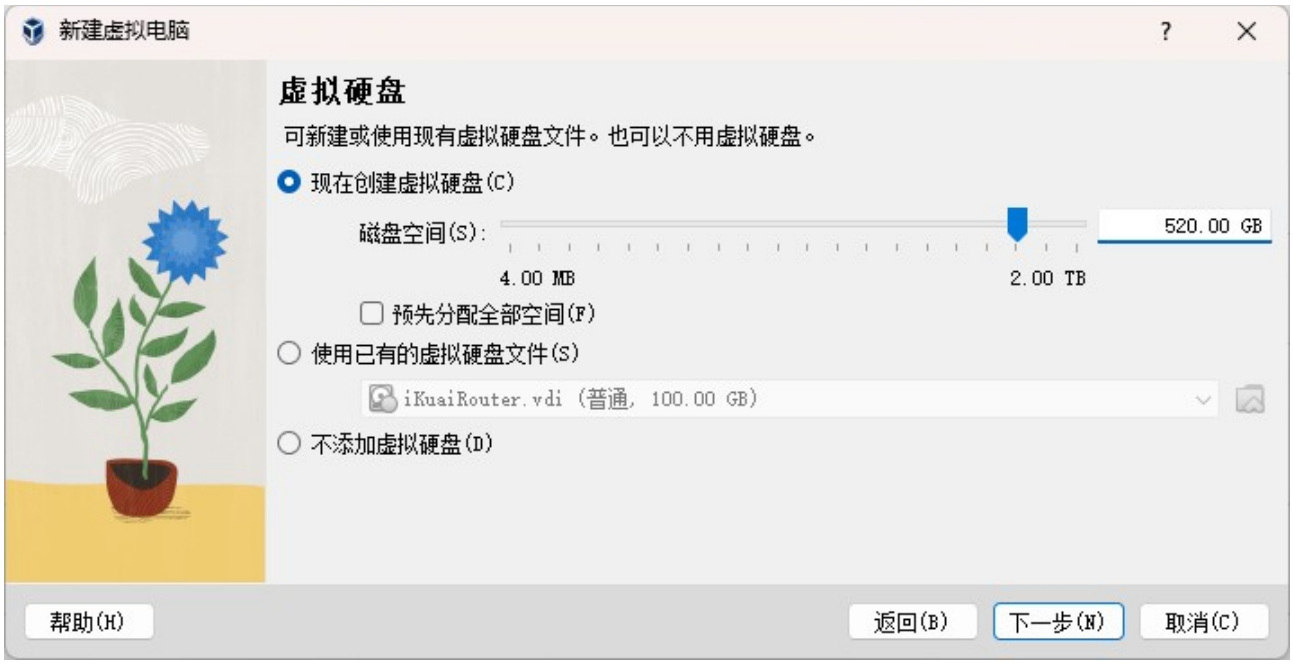
默认内存大小：2048MB

CPU：1

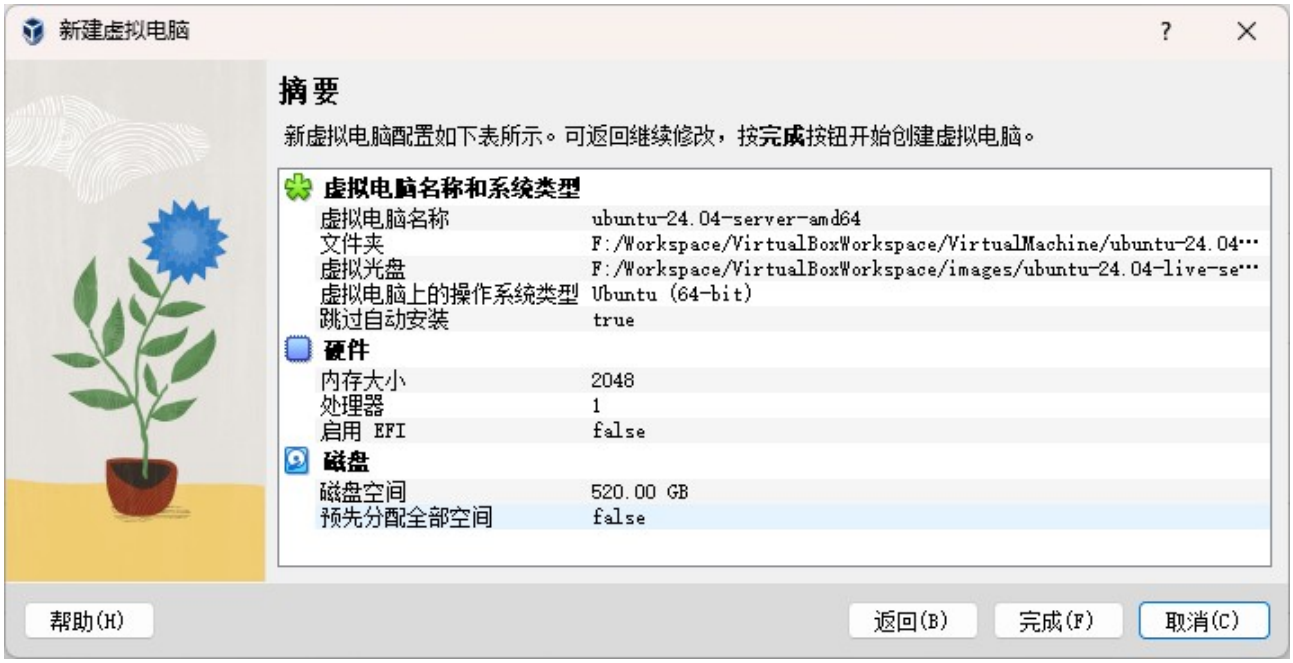


2.1.3 配置硬盘

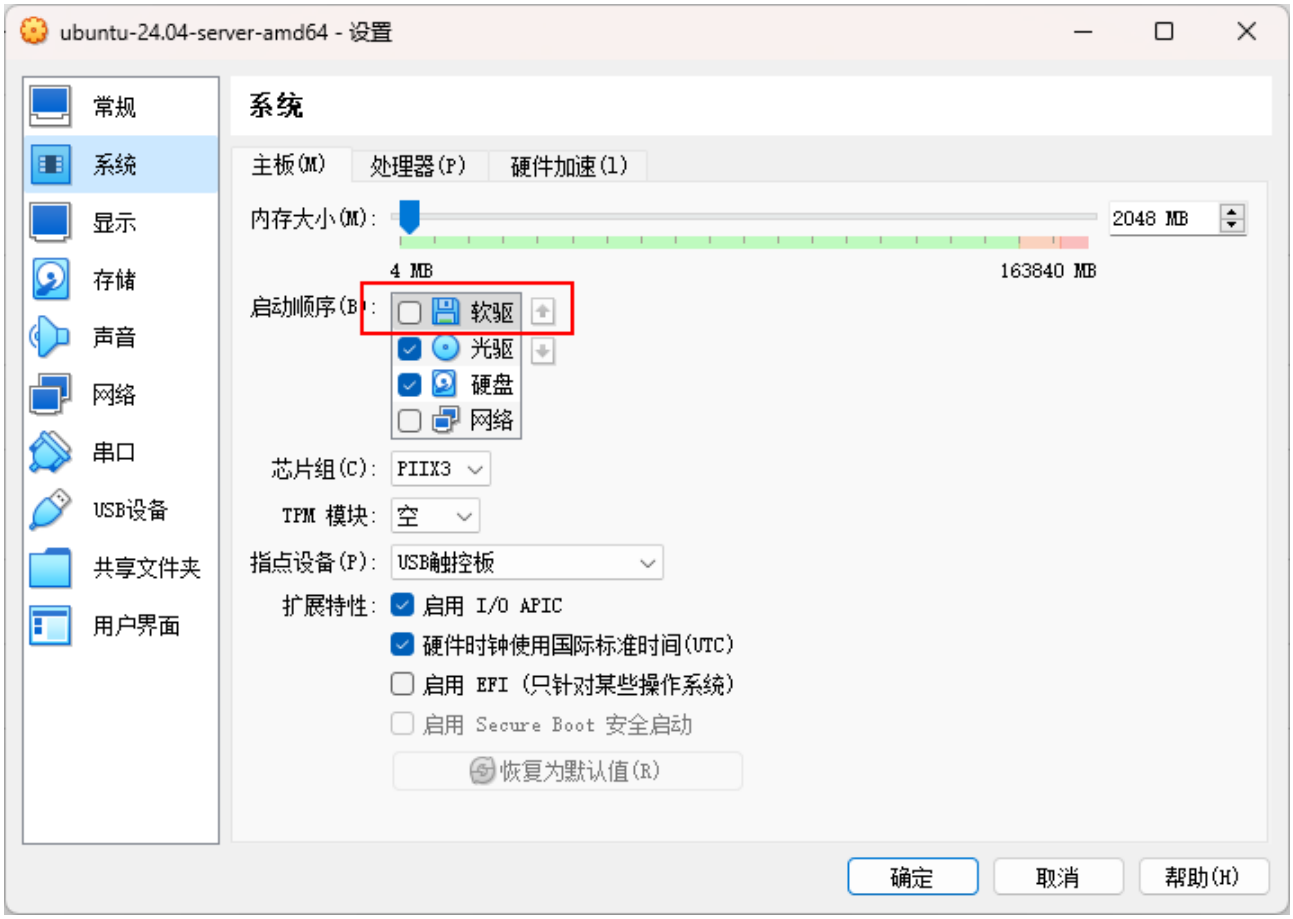
硬盘大小：520GB



2.1.4 检查虚拟机配置

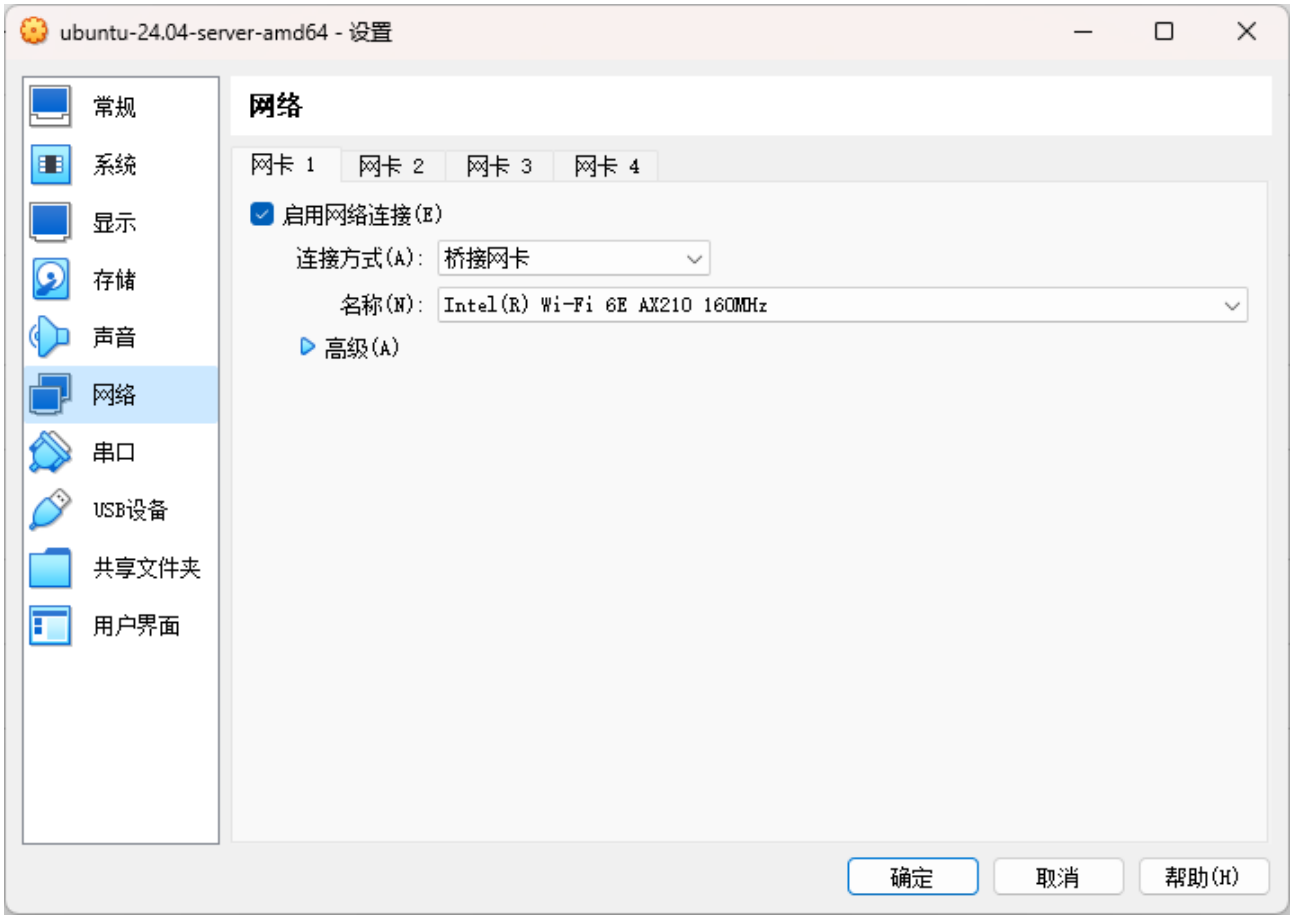


2.1.5 去除软驱



2.1.6 配置网卡

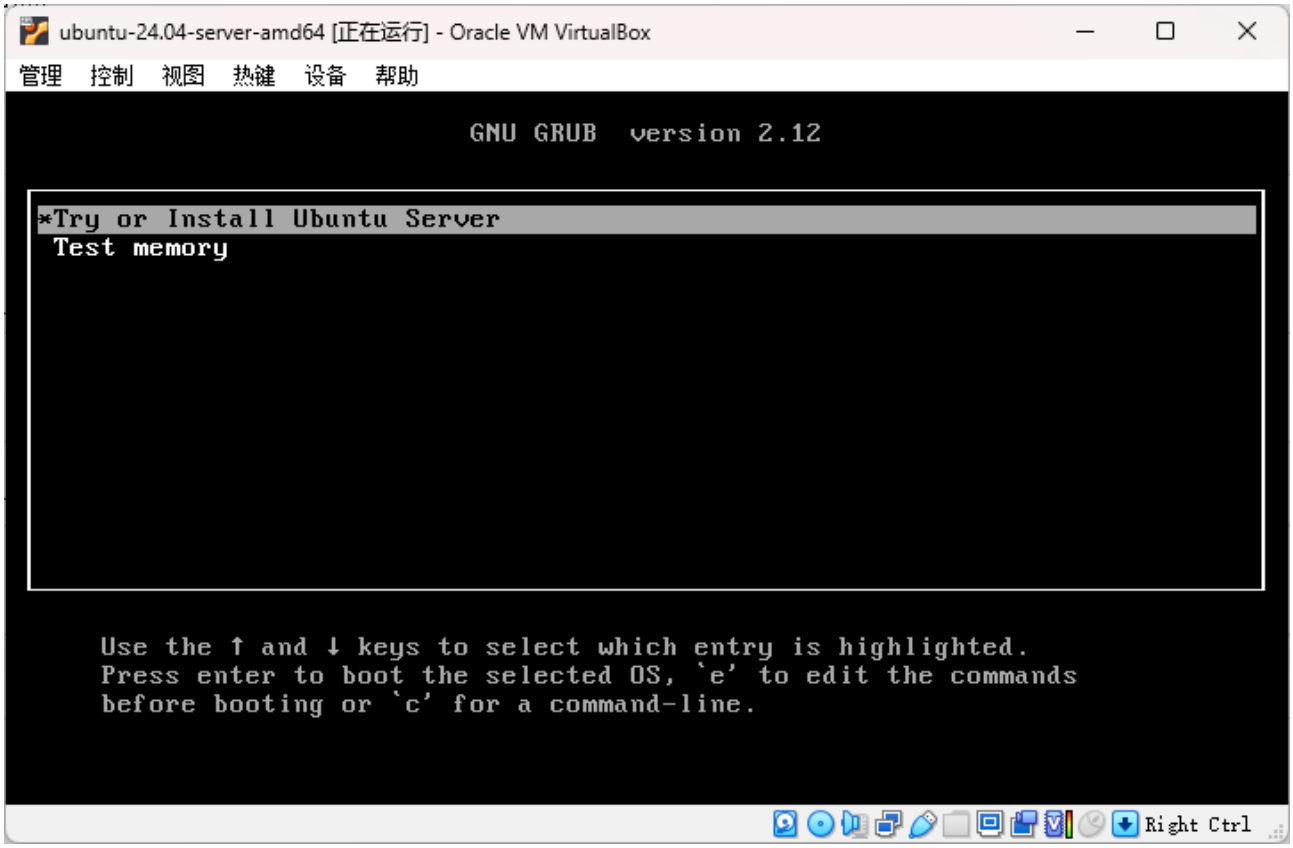
选择网卡 1 为桥接模式



2.1.7 启动虚拟机

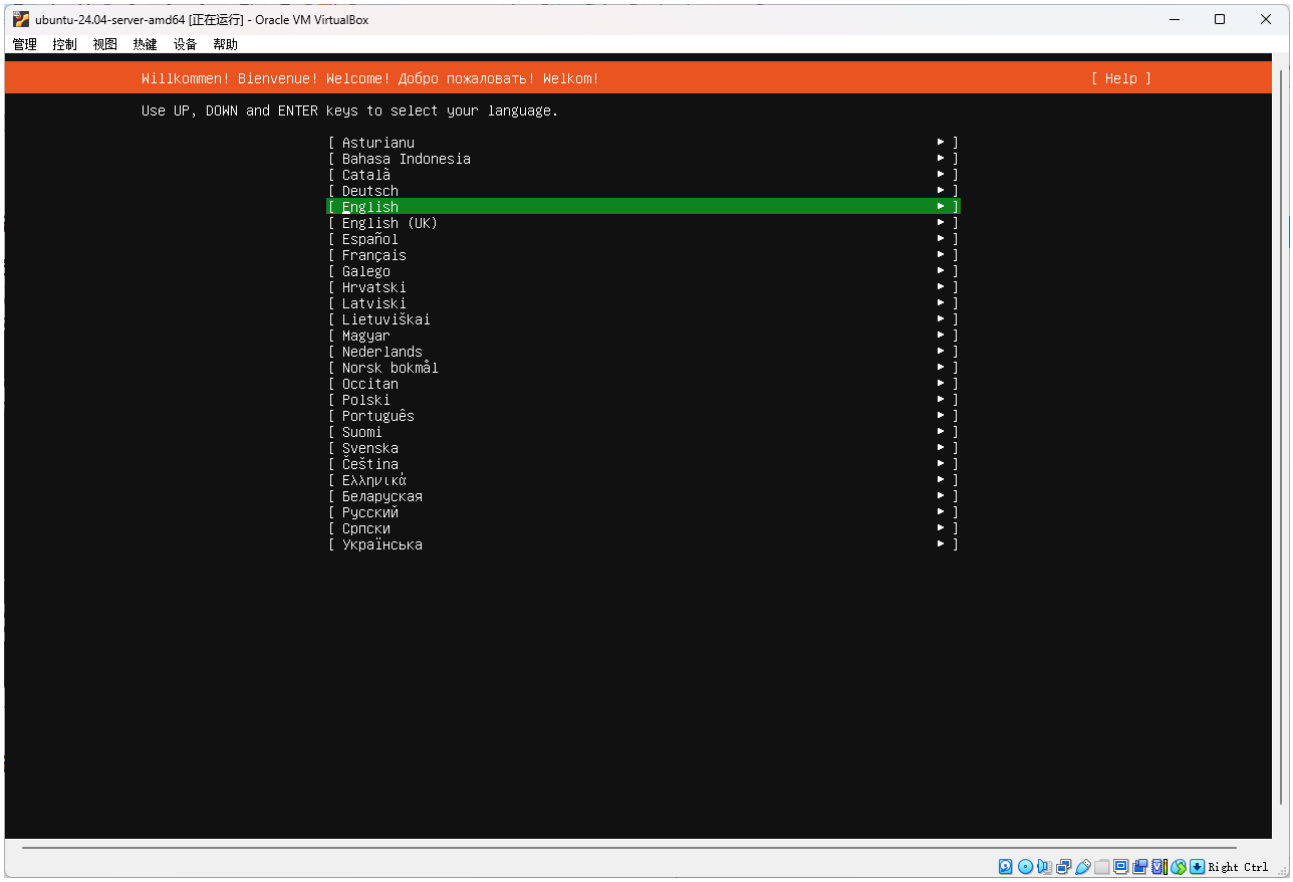
2.2 安装虚拟机

2.2.1 安装系统

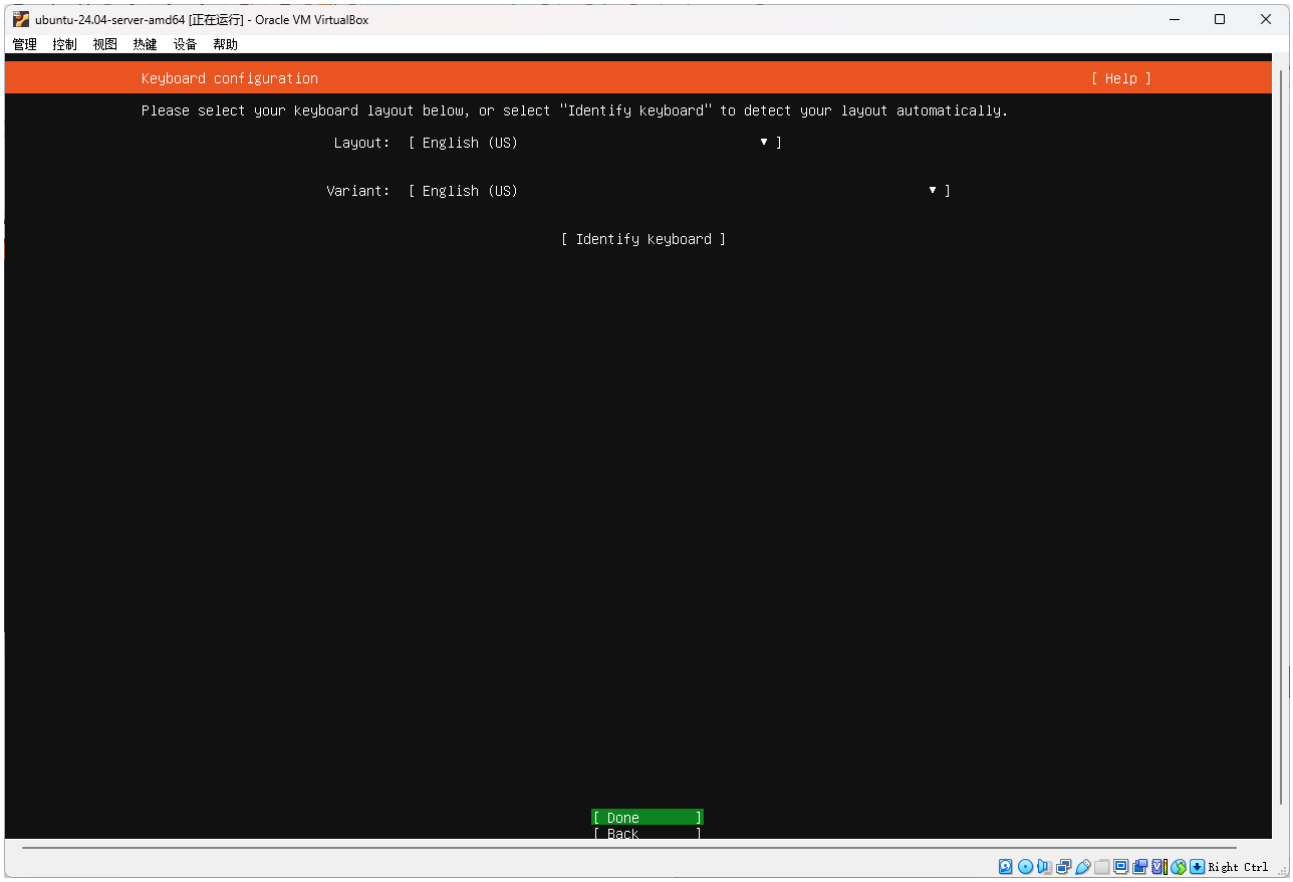


2.2.2 选择系统语言

选择 English

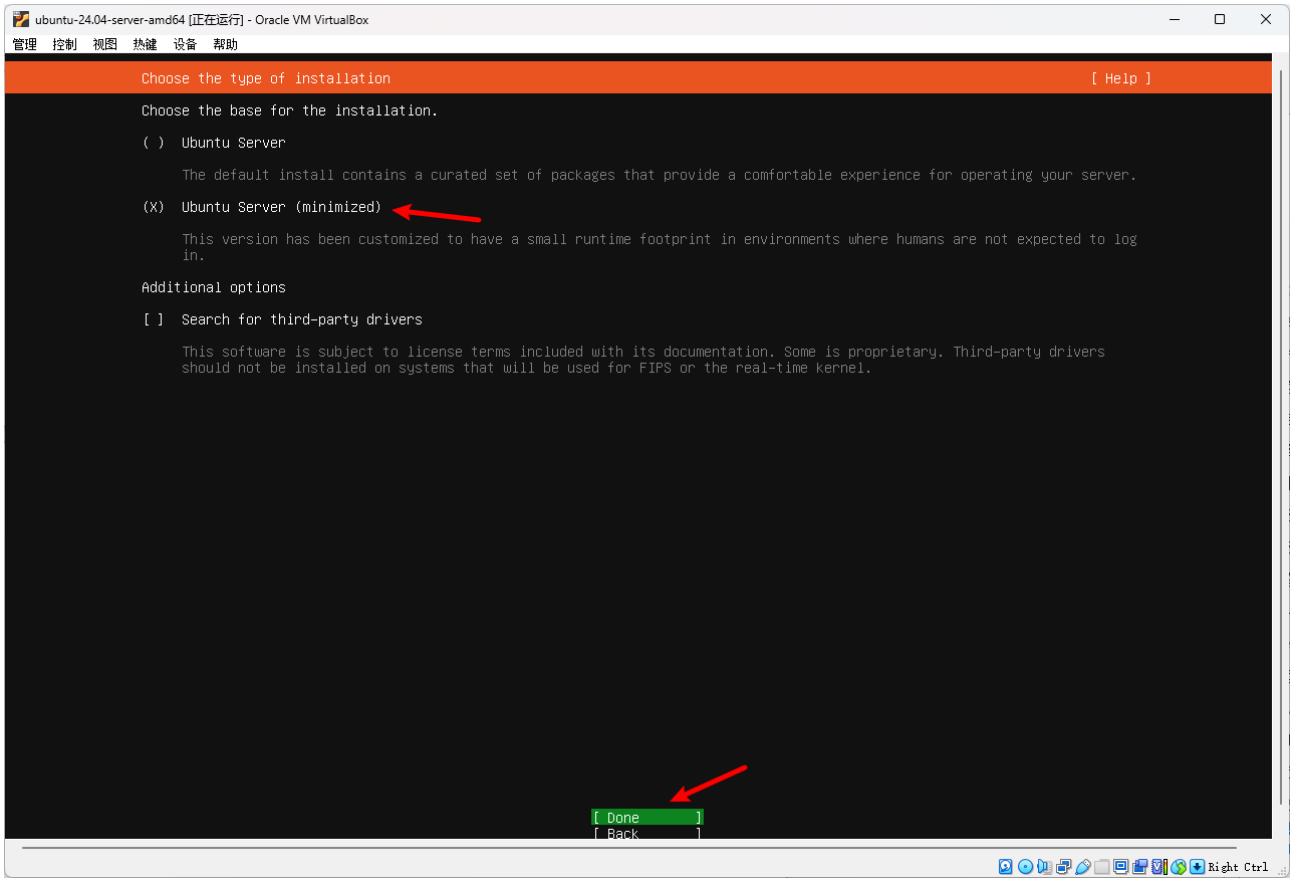

ubuntu-24.04-server-amd64 [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Willkommen! Bienvenue! Welcome! Добро пожаловать! Welkom!
[Help]
Use UP, DOWN and ENTER keys to select your language.
[Asturianu ▸]
[Bahasa Indonesia ▸]
[Català ▸]
[Deutsch ▸]
[English ▸]
[English (UK) ▸]
[Español ▸]
[Français ▸]
[Galego ▸]
[Hrvatski ▸]
[Latviski ▸]
[Lietuviškai ▸]
[Magyar ▸]
[Nederlands ▸]
[Norsk bokmål ▸]
[Occitan ▸]
[Polski ▸]
[Português ▸]
[Suomi ▸]
[Svenska ▸]
[Čeština ▸]
[Ελληνικά ▸]
[Беларуская ▸]
[Русский ▸]
[Српски ▸]
[Українська ▸]
Right Ctrl

2.2.3 选择键盘布局



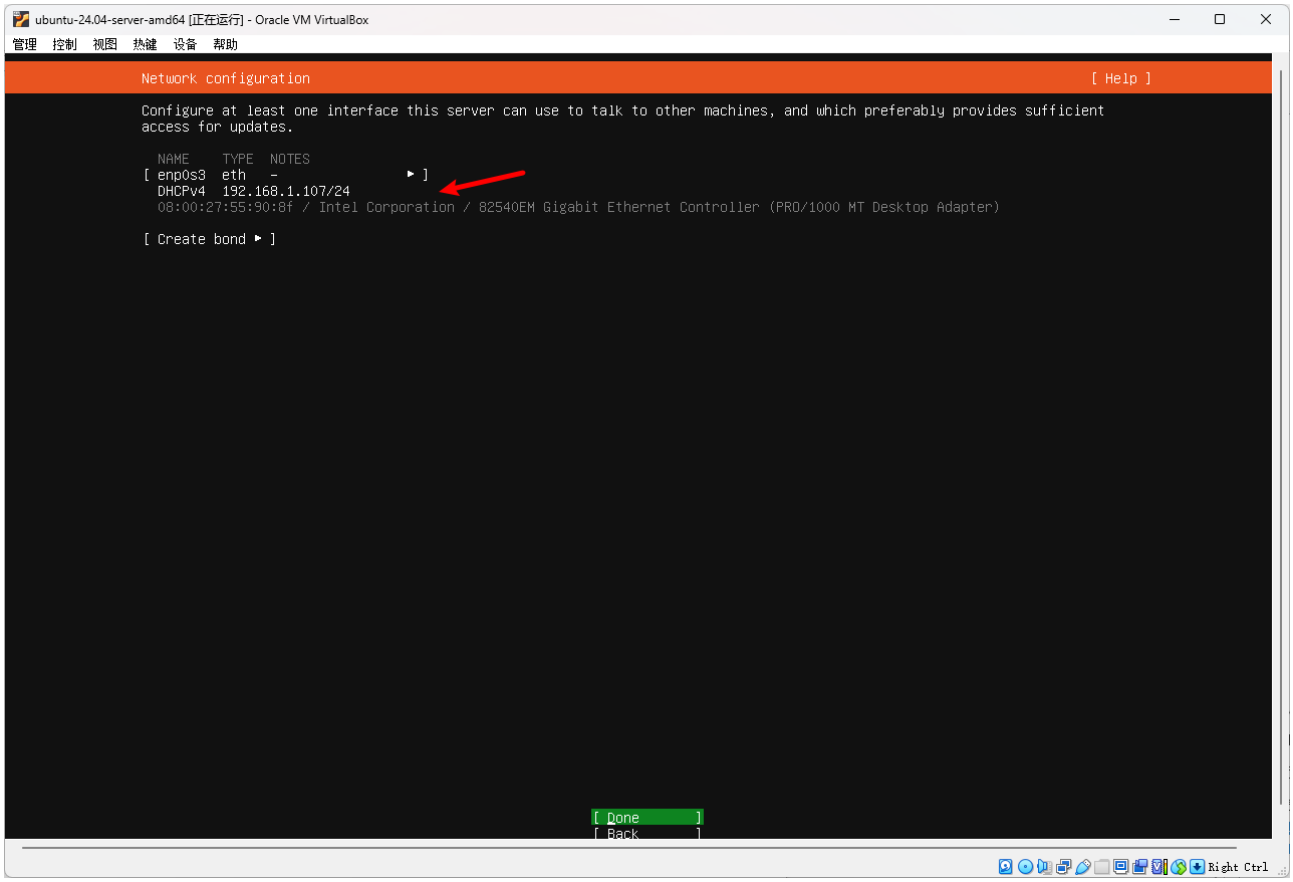
2.2.4 最小化安装

tab 键选择最小化安装



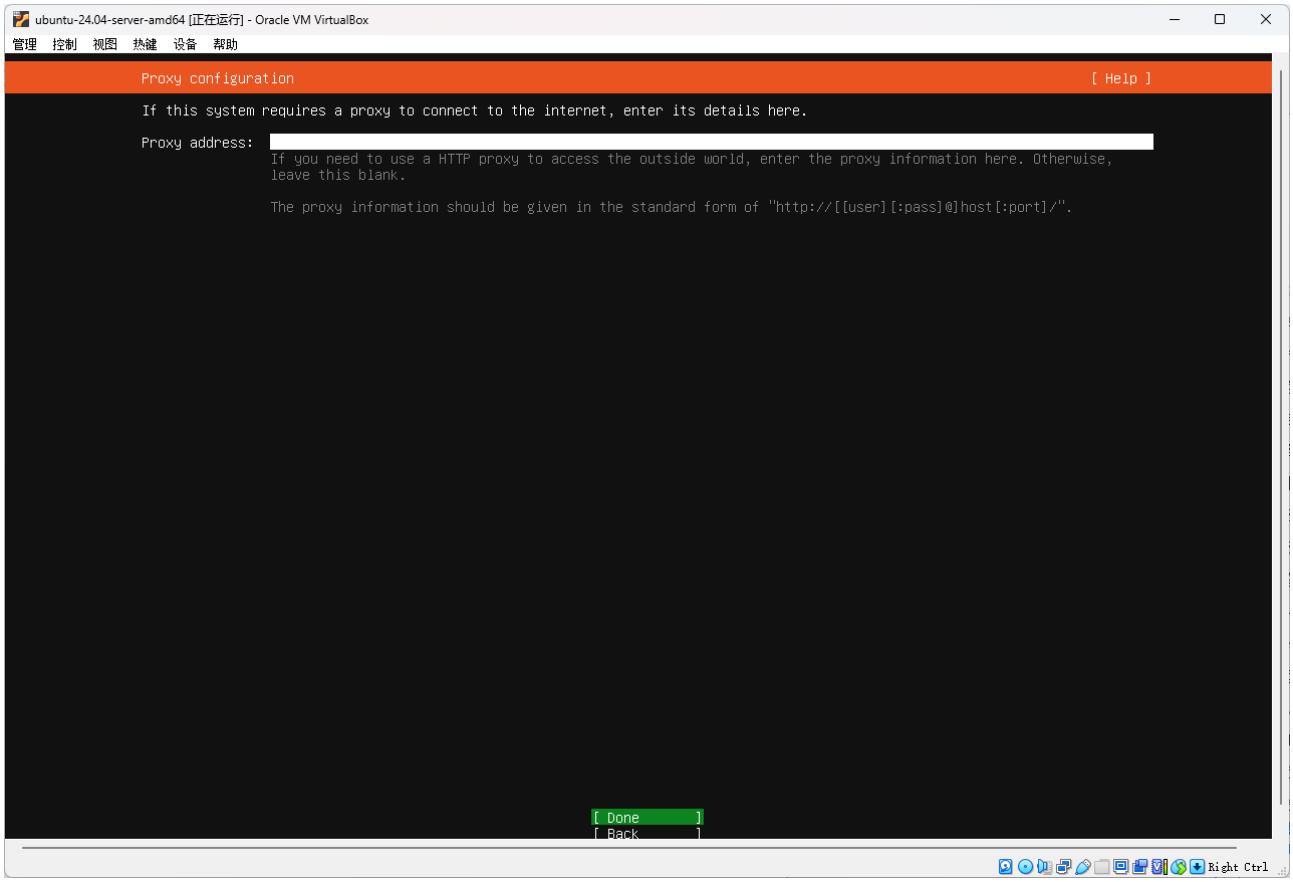
2.2.5 配置 IP 地址

使用默认 DHCP 获取的 IP 地址



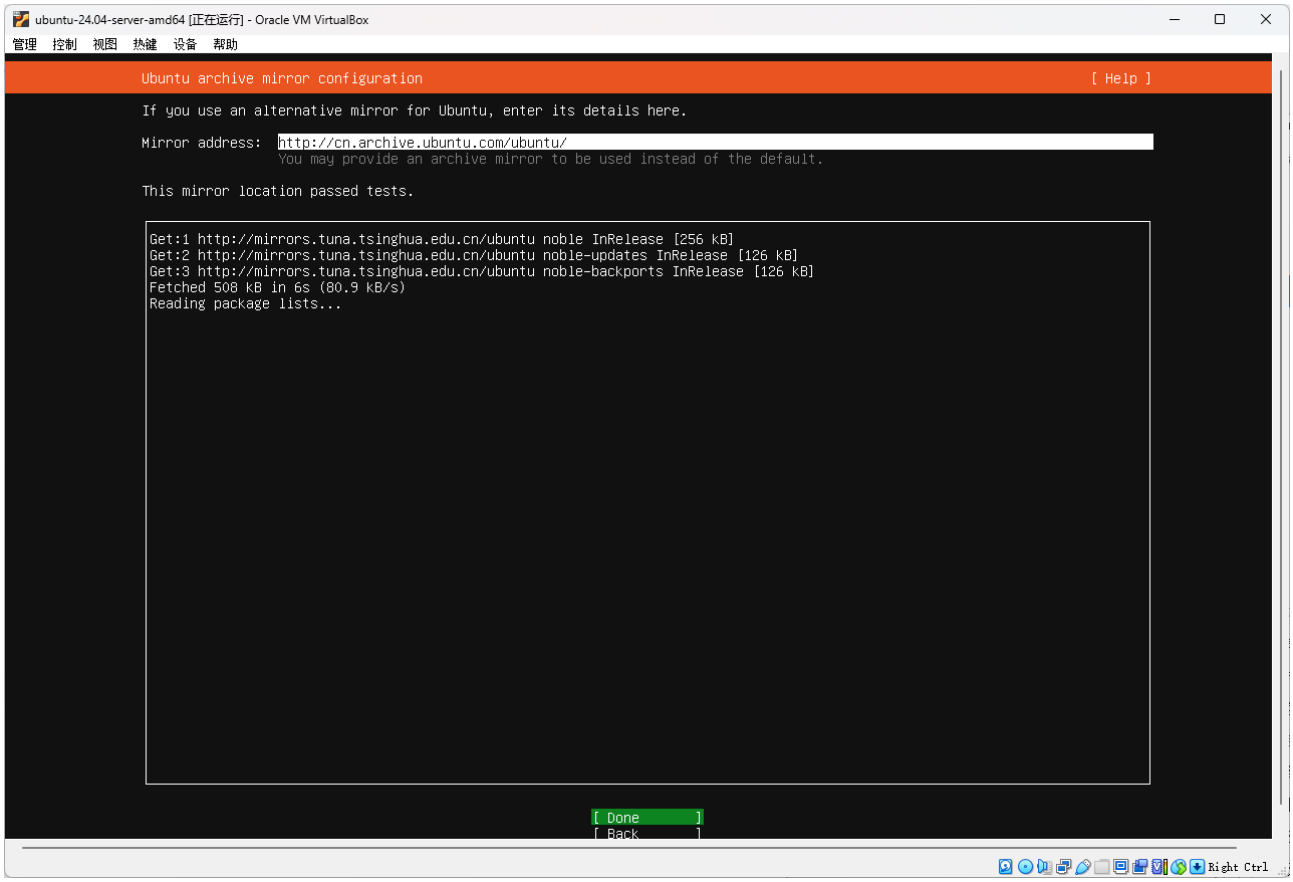
2.2.6 配置代理地址

默认不配置代理地址



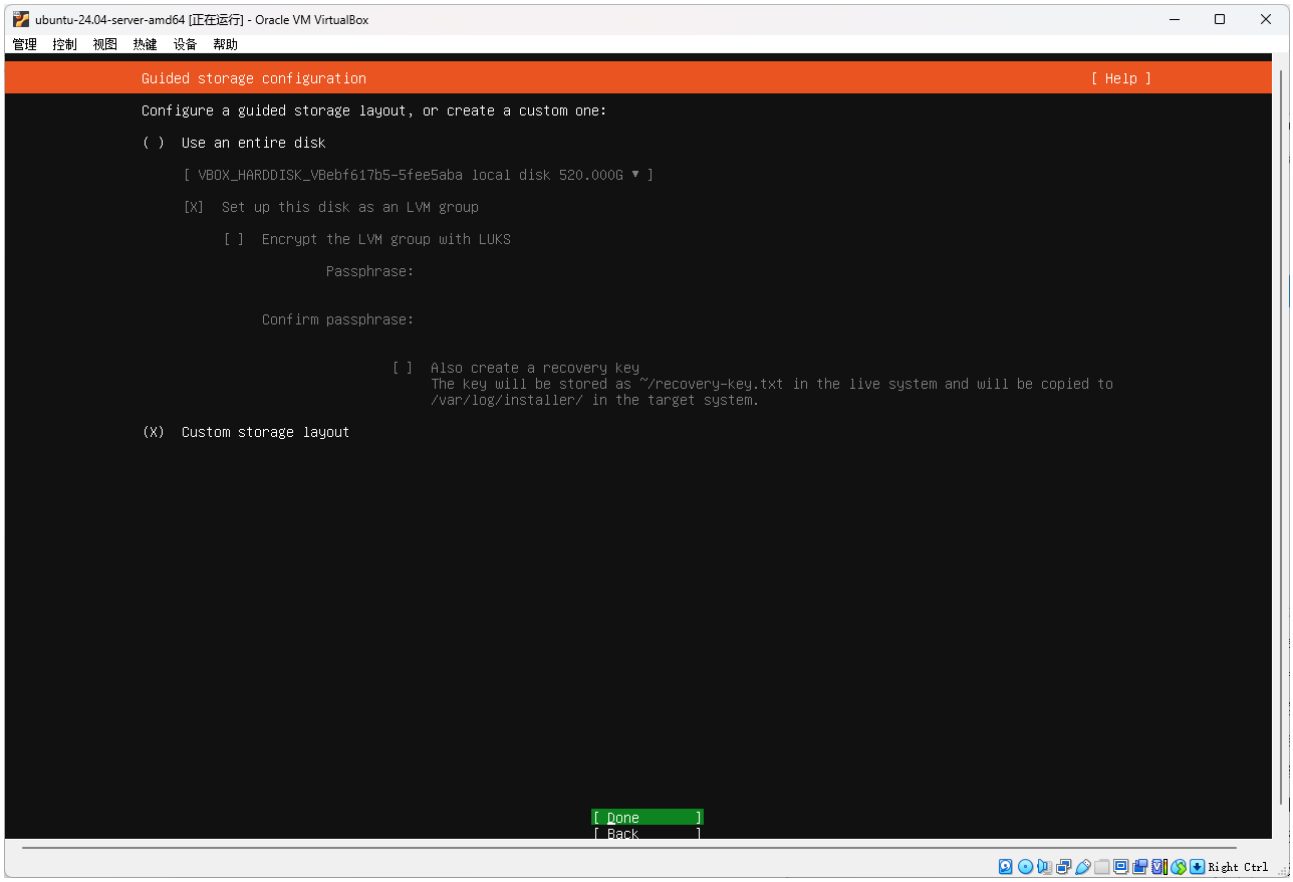
2.2.7 配置镜像地址

使用默认的镜像地址

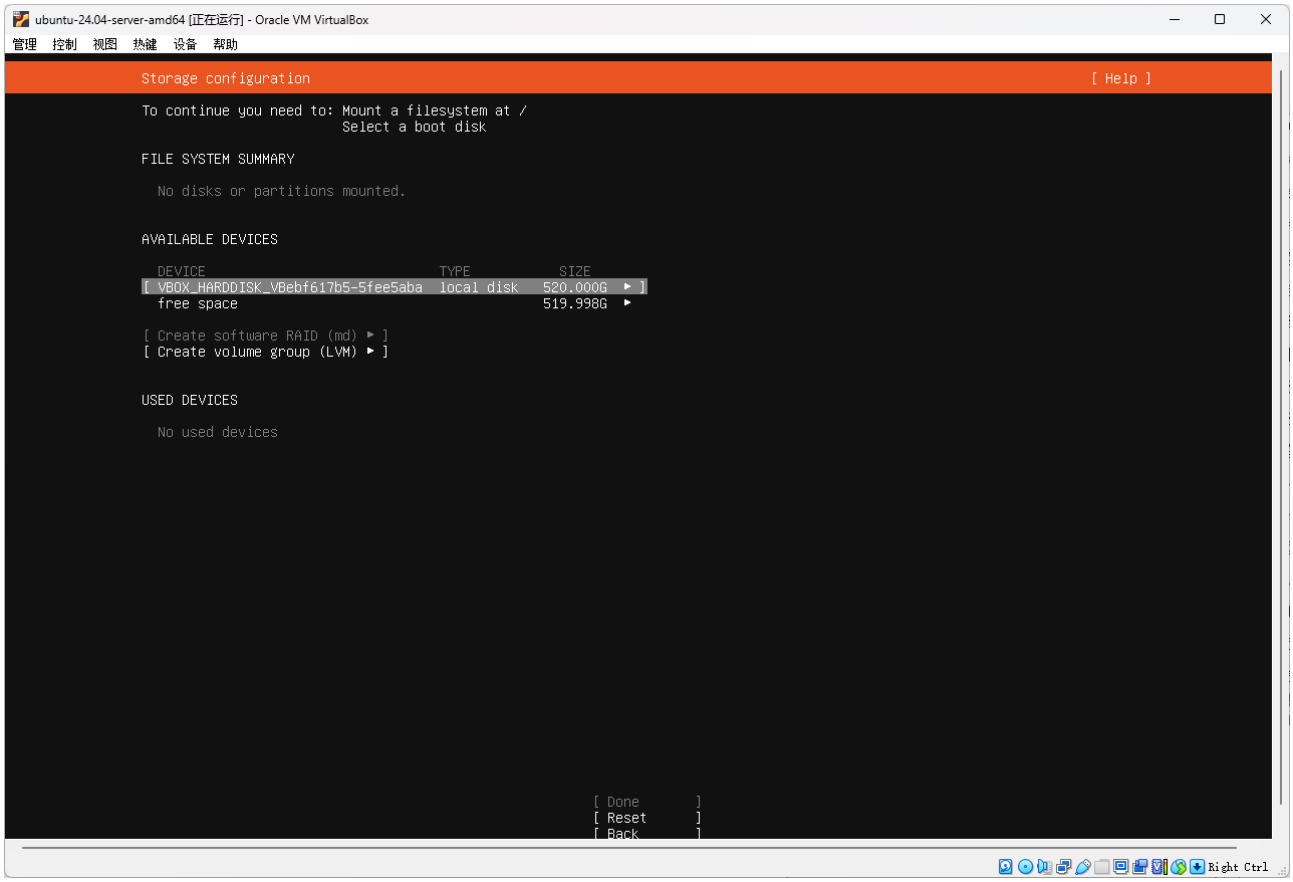


2.2.8 硬盘分区

tab 键选择自定义分区模式，空格键选中，再 tab 键选中 done，Enter 键确认配置


ubuntu-24.04-server-amd64 [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Guided storage configuration
[Help]
Configure a guided storage layout, or create a custom one:
( ) Use an entire disk
[VBOX_HARDDISK_VBebf617b5-5fee5aba local disk 520.000G ▼]
[X] Set up this disk as an LVM group
[ ] Encrypt the LVM group with LUKS
Passphrase:
Confirm passphrase:
[ ] Also create a recovery key
The key will be stored as ~/recovery-key.txt in the live system and will be copied to
/var/log/installer/ in the target system.
(X) Custom storage layout
[Done]
[Back]
Right Ctrl

开始分区

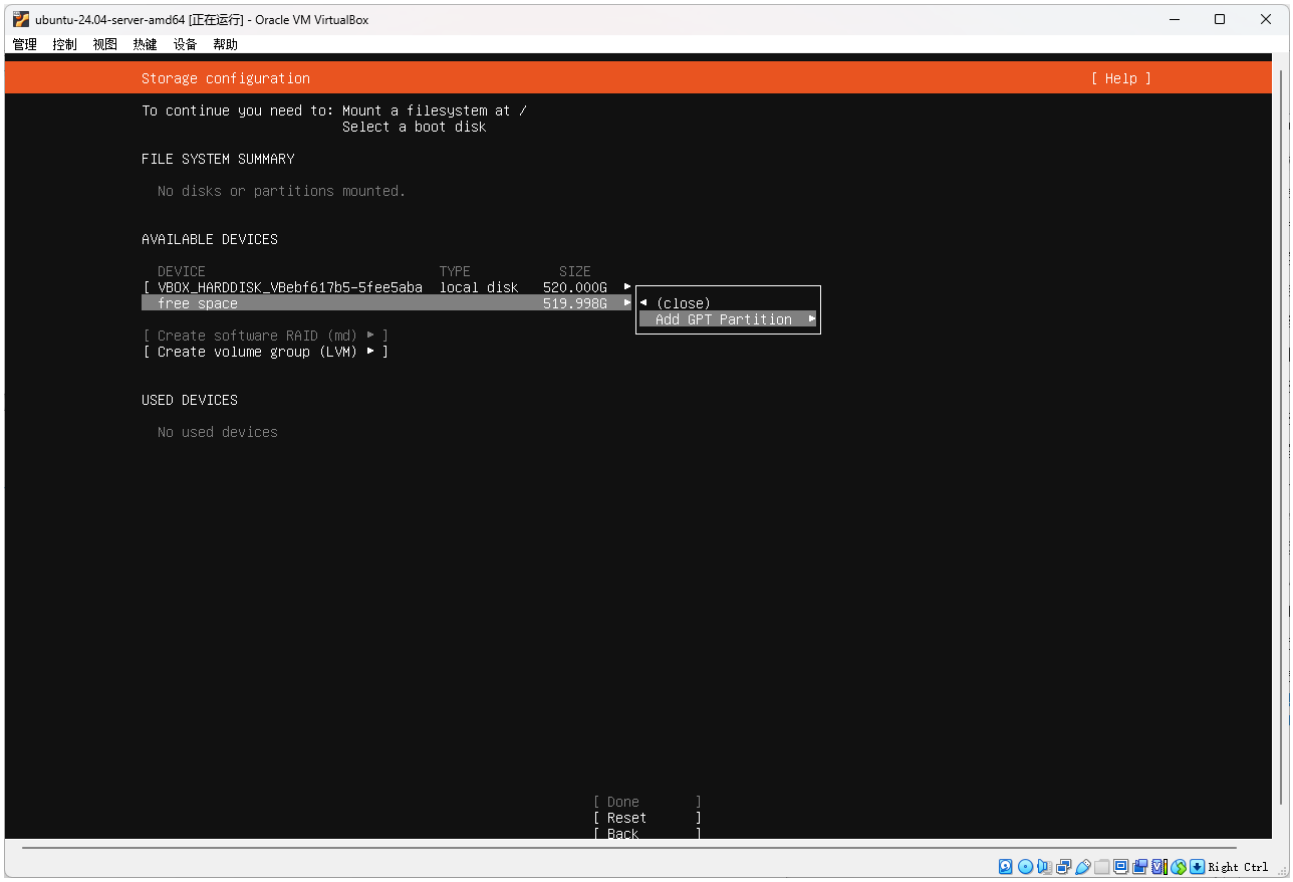

ubuntu-24.04-server-amd64 [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Storage configuration
[Help]
To continue you need to: Mount a filesystem at /
Select a boot disk
FILE SYSTEM SUMMARY
No disks or partitions mounted.
AVAILABLE DEVICES
DEVICE TYPE SIZE
[VBOX_HARDDISK_VBebf617b5-5fee5aba local disk 520.000G ▶]
free space 519.998G ▶
[Create software RAID (md) ▶]
[Create volume group (LVM) ▶]
USED DEVICES
No used devices
[Done]
[Reset]
[Back]
Right Ctrl

分区参数：

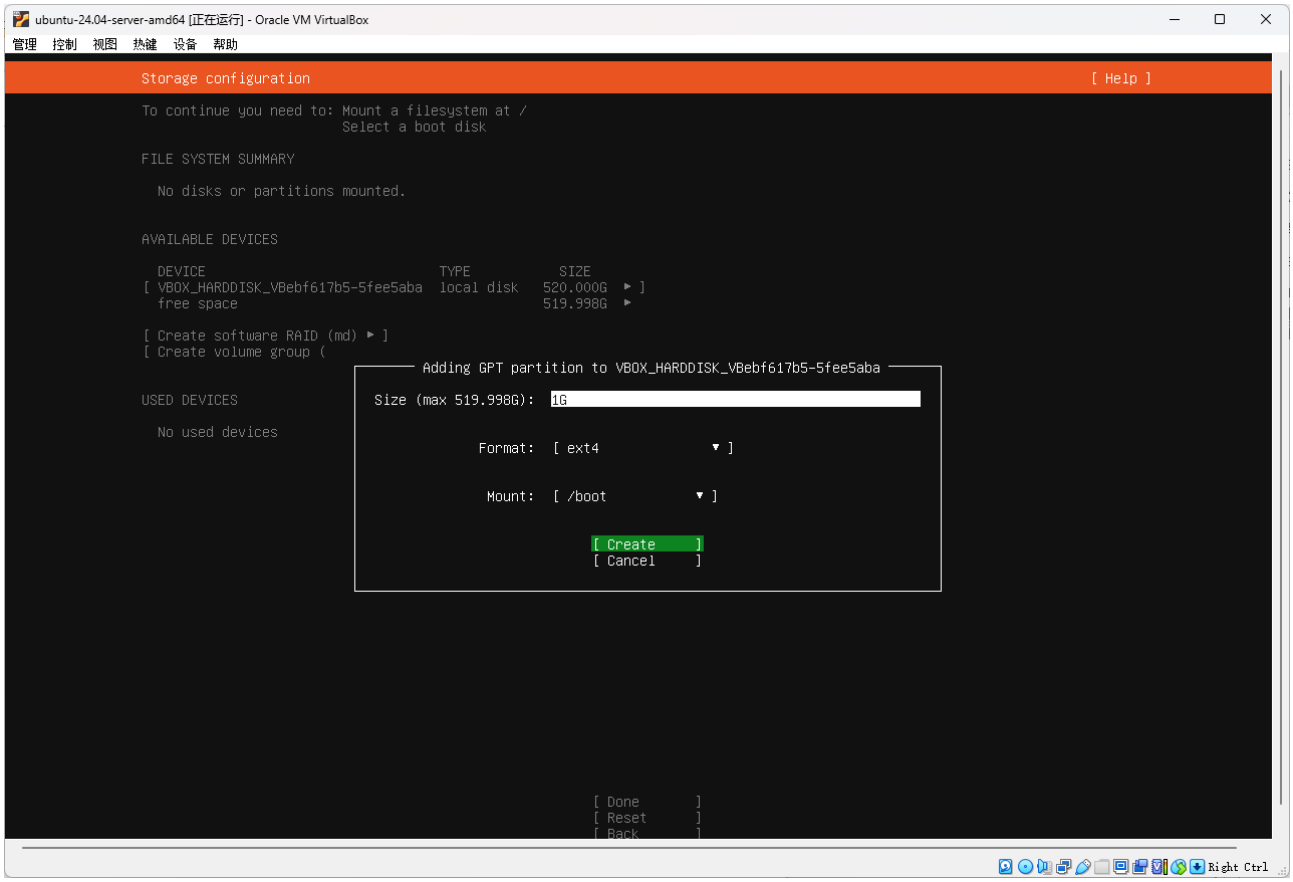
/boot 1GB

swap 2GB

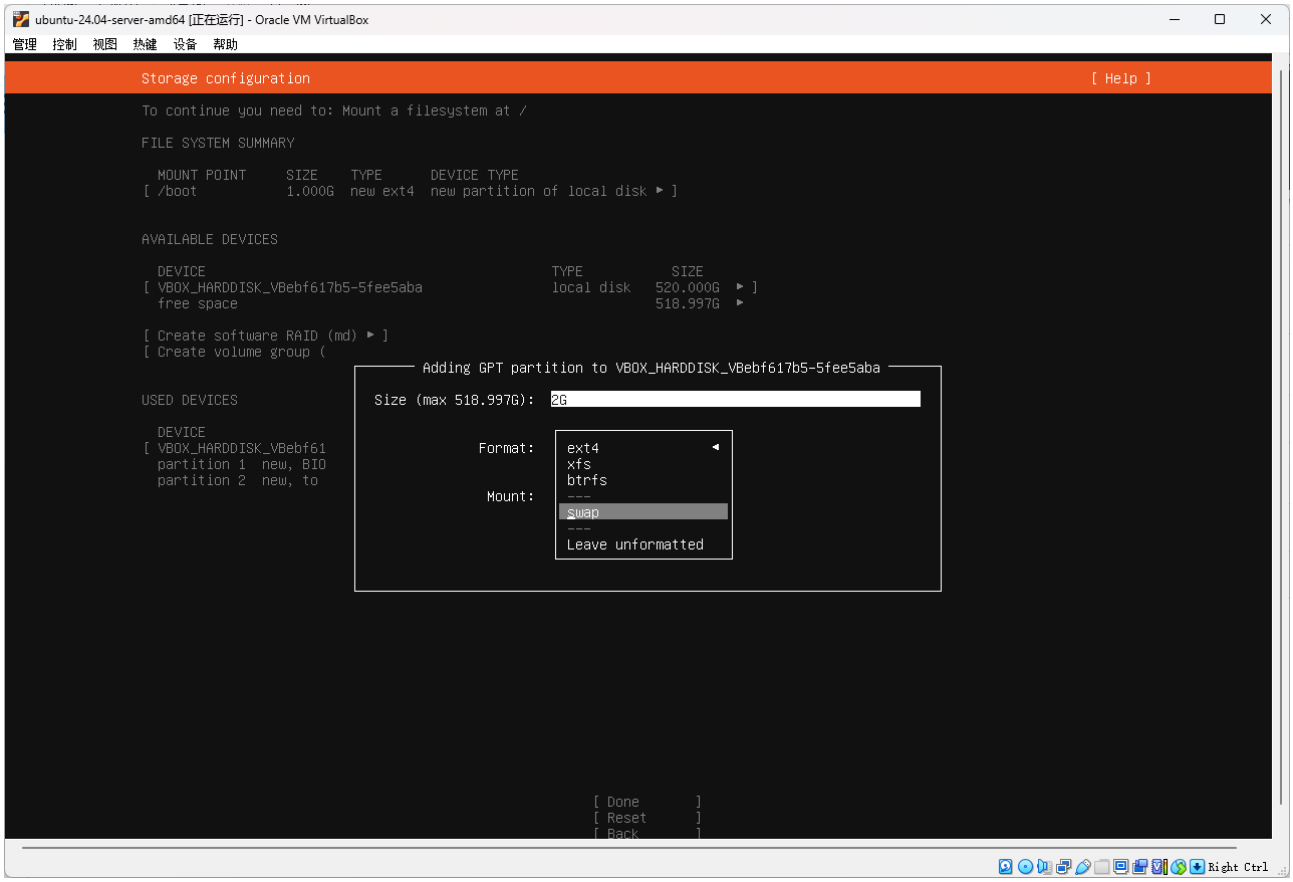
/　　剩余全部容量



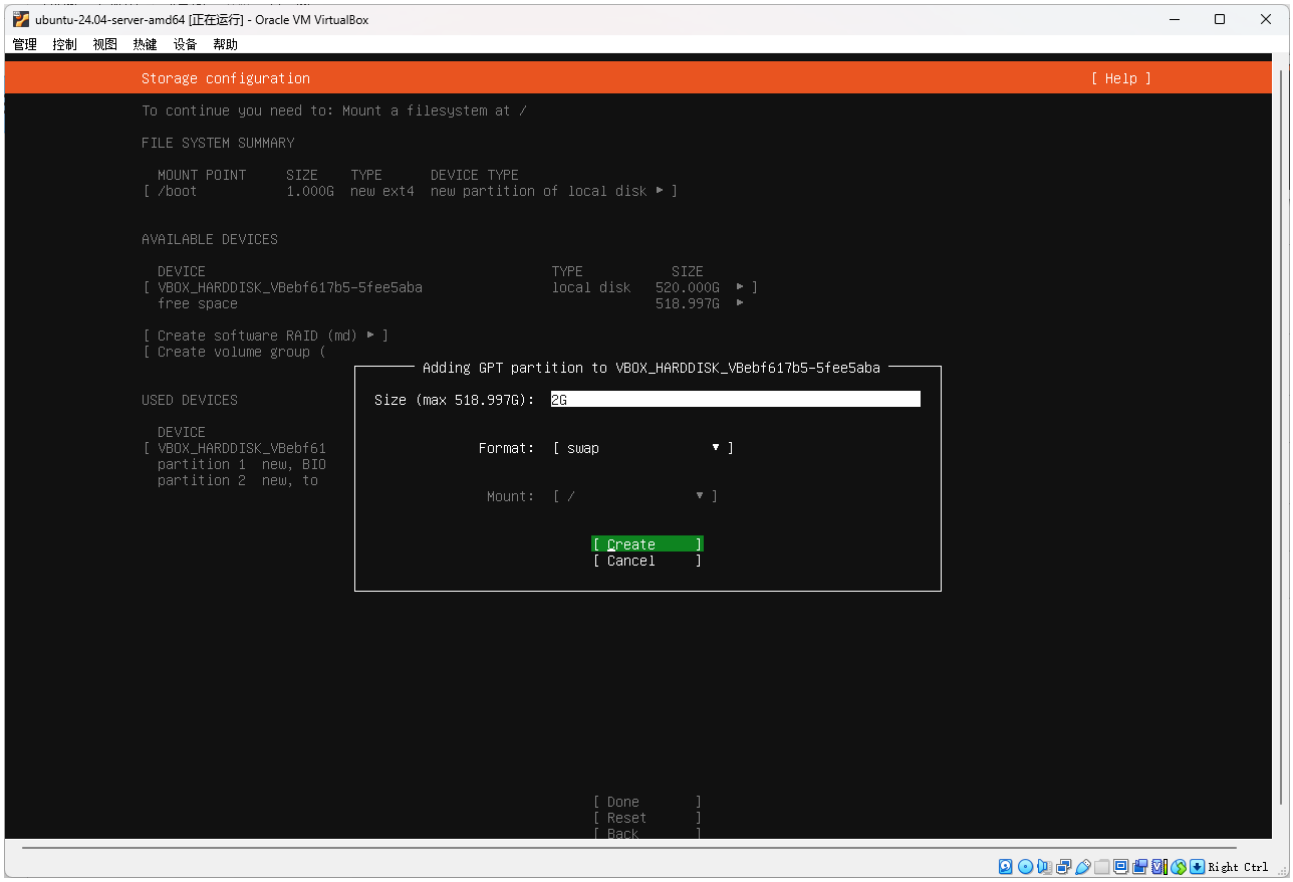
/boot 分区


ubuntu-24.04-server-amd64 [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Storage configuration
[Help]
To continue you need to: Mount a filesystem at /
Select a boot disk
FILE SYSTEM SUMMARY
No disks or partitions mounted.
AVAILABLE DEVICES
DEVICE TYPE SIZE
[VBOX_HARDDISK_VBebf617b5-5fee5aba local disk 520.000G ▸]
free space 519.998G ▸
[Create software RAID (md) ▸]
[Create volume group (▸]
USED DEVICES
No used devices
Adding GPT partition to VBOX_HARDDISK_VBebf617b5-5fee5aba
Size (max 519.998G): 1G
Format: [ext4 ▾]
Mount: [/boot ▾]
[Create]
[Cancel]
[Done]
[Reset]
[Back]
Right Ctrl

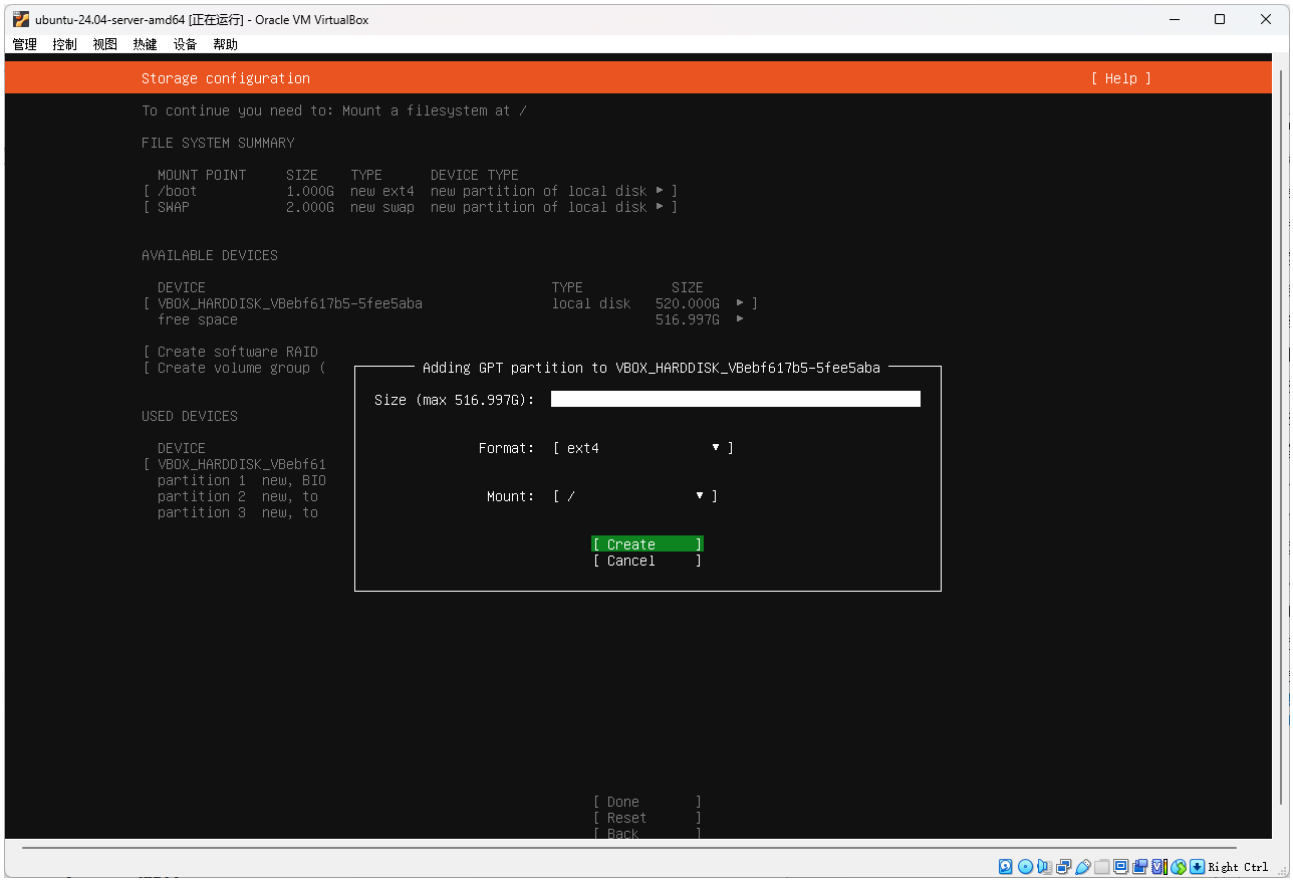
swap 分区


ubuntu-24.04-server-amd64 [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Storage configuration
[Help]
To continue you need to: Mount a filesystem at /
FILE SYSTEM SUMMARY
MOUNT POINT SIZE TYPE DEVICE TYPE
[/boot 1.000G new ext4 new partition of local disk ▸]
AVAILABLE DEVICES
DEVICE TYPE SIZE
[VBOX_HARDDISK_VBebf617b5-5fee5aba local disk 520.000G ▸]
free space 518.997G ▸
[Create software RAID (md) ▸]
[Create volume group (▸]
USED DEVICES
DEVICE
[VBOX_HARDDISK_VBebf61
partition 1 new, BIO
partition 2 new, to
Adding GPT partition to VBOX_HARDDISK_VBebf617b5-5fee5aba
Size (max 518.997G): 2G
Format:
Mount:
ext4
xfs
btrfs
---
swap

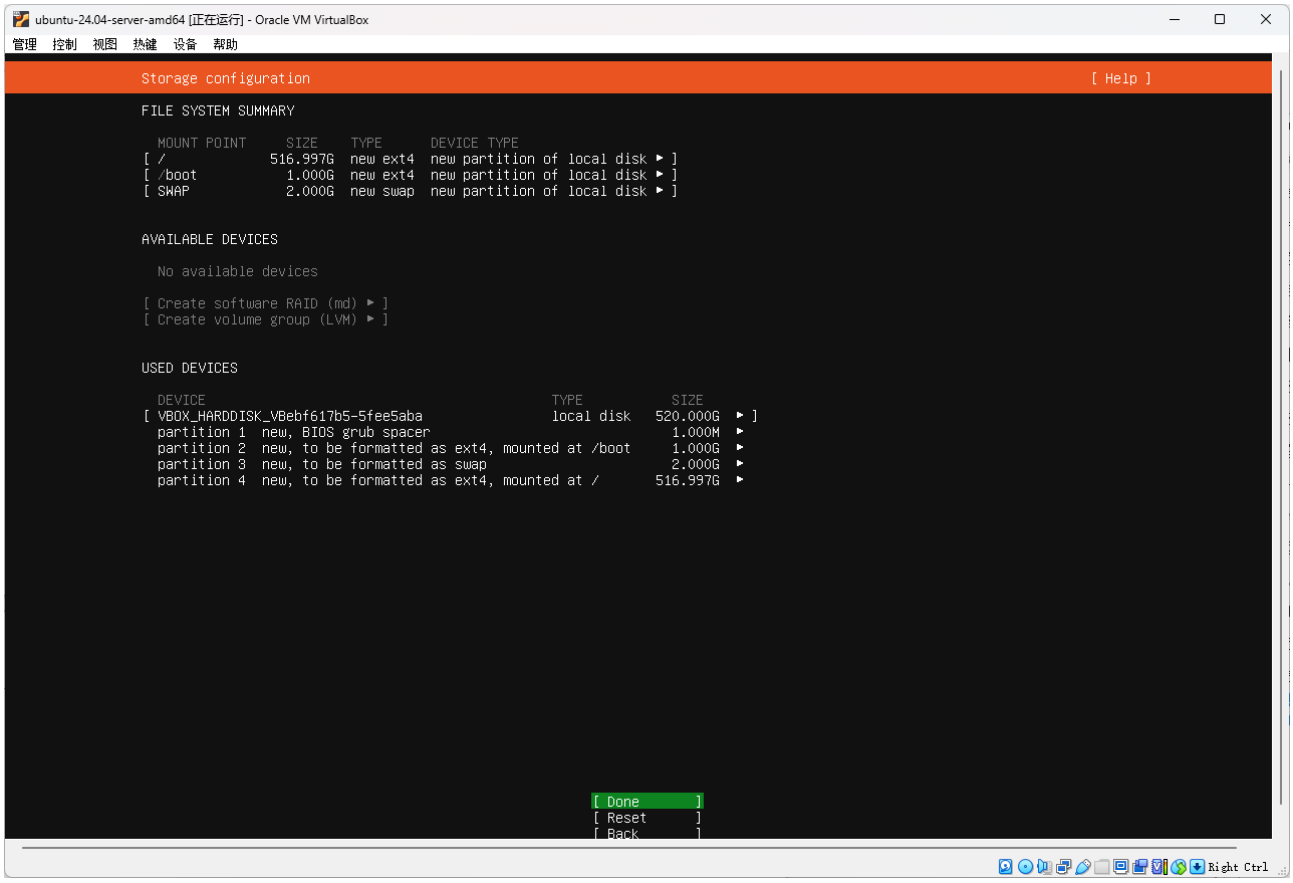
Leave unformatted
[Done]
[Reset]
[Back]
Right Ctrl

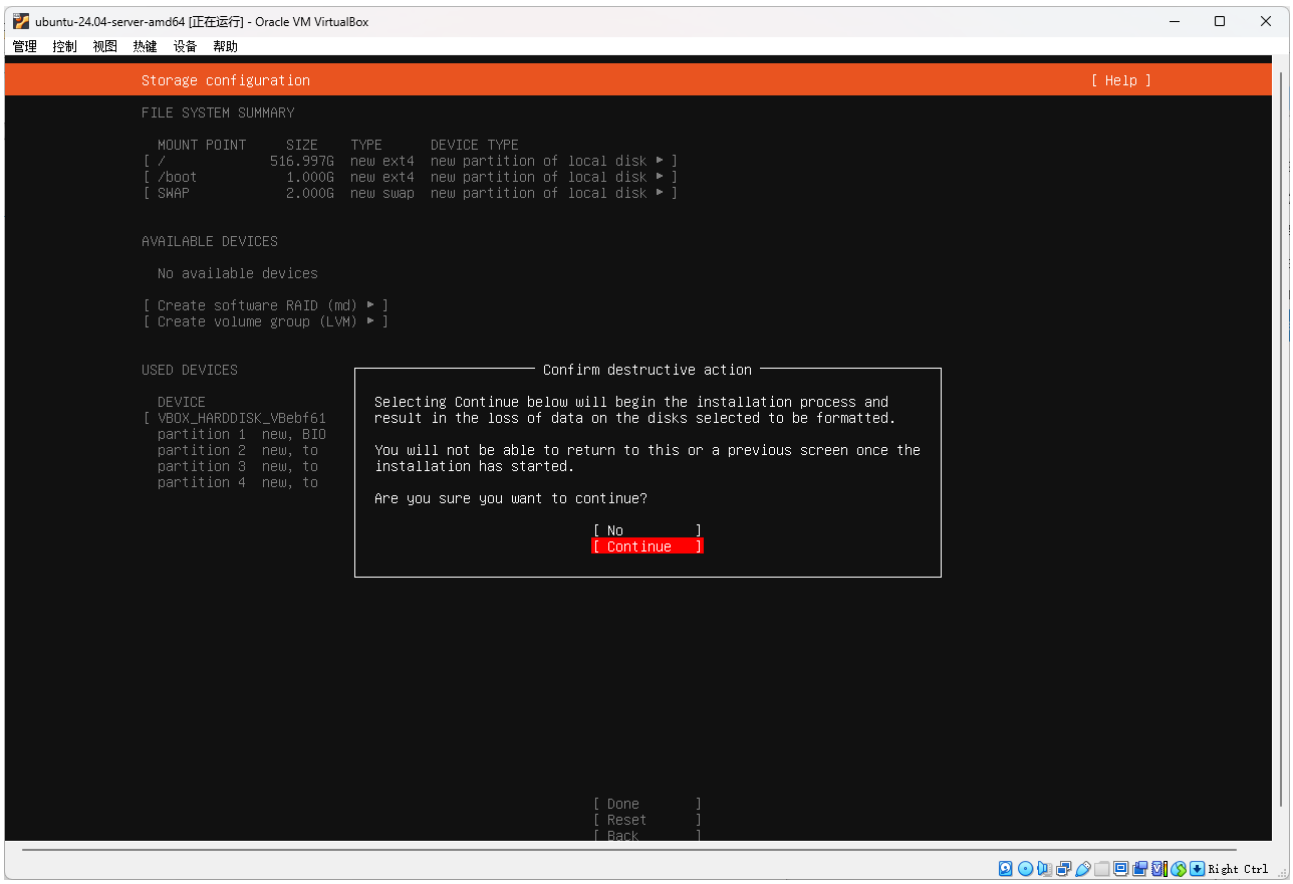

ubuntu-24.04-server-amd64 [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Storage configuration
[Help]
To continue you need to: Mount a filesystem at /
FILE SYSTEM SUMMARY
MOUNT POINT SIZE TYPE DEVICE TYPE
[/boot 1.000G new ext4 new partition of local disk ▸]
AVAILABLE DEVICES
DEVICE TYPE SIZE
[VBOX_HARDDISK_VBebf617b5-5fee5aba local disk 520.000G ▸]
free space 518.997G ▸
[Create software RAID (md) ▸]
[Create volume group (
USED DEVICES
DEVICE
[VBOX_HARDDISK_VBebf61
partition 1 new, BIO
partition 2 new, to
Adding GPT partition to VBOX_HARDDISK_VBebf617b5-5fee5aba
Size (max 518.997G): 2G
Format: [swap ▾]
Mount: [/ ▾]
[Create]
[Cancel]
[Done]
[Reset]
[Back]
Right Ctrl

/ 分区


ubuntu-24.04-server-amd64 [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Storage configuration
[Help]
To continue you need to: Mount a filesystem at /
FILE SYSTEM SUMMARY
MOUNT POINT SIZE TYPE DEVICE TYPE
[/boot 1.000G new ext4 new partition of local disk ▸]
[SWAP 2.000G new swap new partition of local disk ▸]
AVAILABLE DEVICES
DEVICE TYPE SIZE
[VBOX_HARDDISK_VBebf617b5-5fee5aba local disk 520.000G ▸]
free space 516.997G ▸
[Create software RAID
[Create volume group (
USED DEVICES
DEVICE
[VBOX_HARDDISK_VBebf61
partition 1 new, BIO
partition 2 new, to
partition 3 new, to
Adding GPT partition to VBOX_HARDDISK_VBebf617b5-5fee5aba
Size (max 516.997G):
Format: [ext4 ▾]
Mount: [/ ▾]
[Create]
[Cancel]
[Done]
[Reset]
[Back]
Right Ctrl

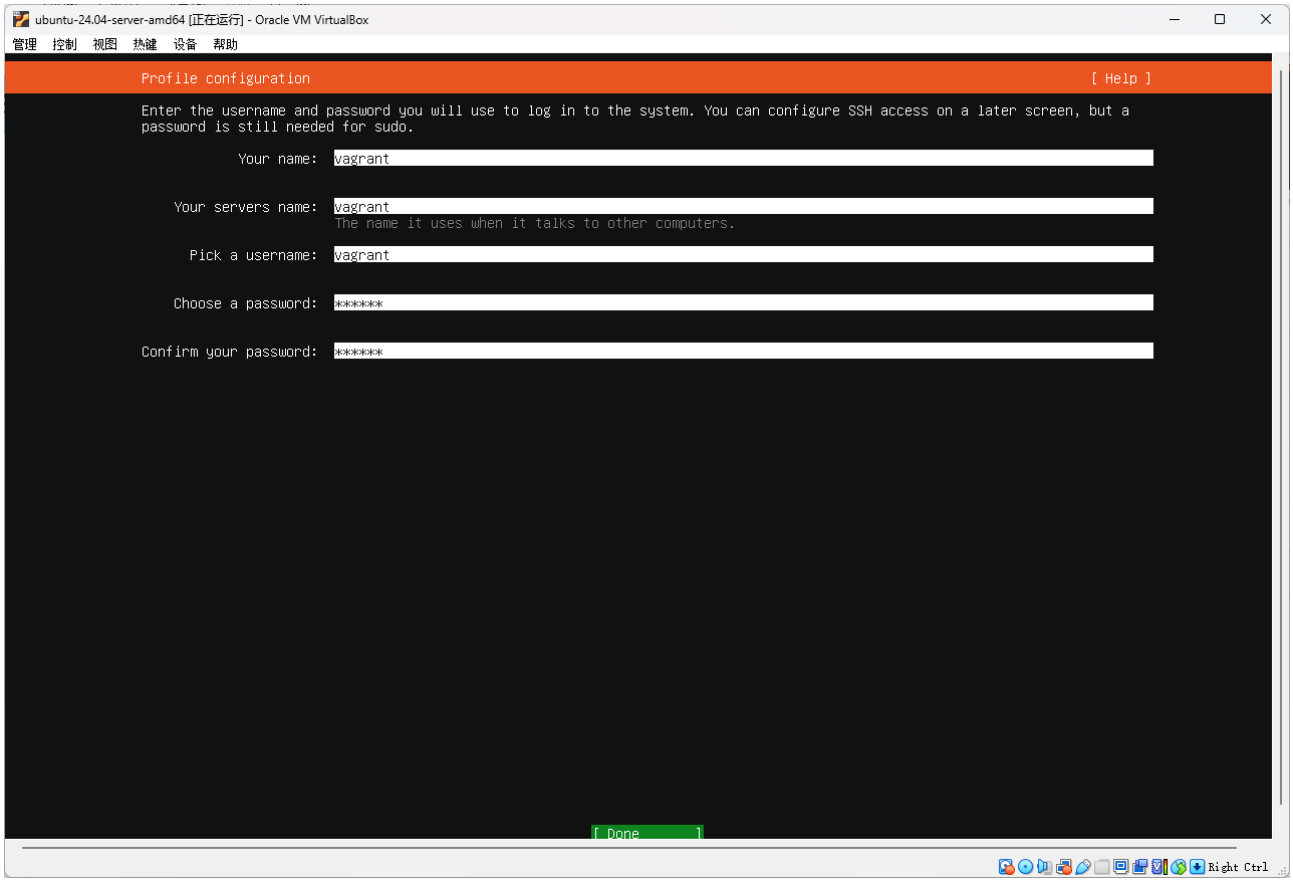
分区完毕 检查分区配置


ubuntu-24.04-server-amd64 [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Storage configuration
[Help]
FILE SYSTEM SUMMARY
MOUNT POINT SIZE TYPE DEVICE TYPE
[/ 516.997G new ext4 new partition of local disk ▸]
[/boot 1.000G new ext4 new partition of local disk ▸]
[SWAP 2.000G new swap new partition of local disk ▸]
AVAILABLE DEVICES
No available devices
[Create software RAID (md) ▸]
[Create volume group (LVM) ▸]
USED DEVICES
DEVICE TYPE SIZE
[VBOX_HARDDISK_VBebf617b5-5fee5aba local disk 520.000G ▸]
partition 1 new, BIOS grub spacer 1.000M ▸
partition 2 new, to be formatted as ext4, mounted at /boot 1.000G ▸
partition 3 new, to be formatted as swap 2.000G ▸
partition 4 new, to be formatted as ext4, mounted at / 516.997G ▸
[Done]
[Reset]
[Back]
Right Ctrl

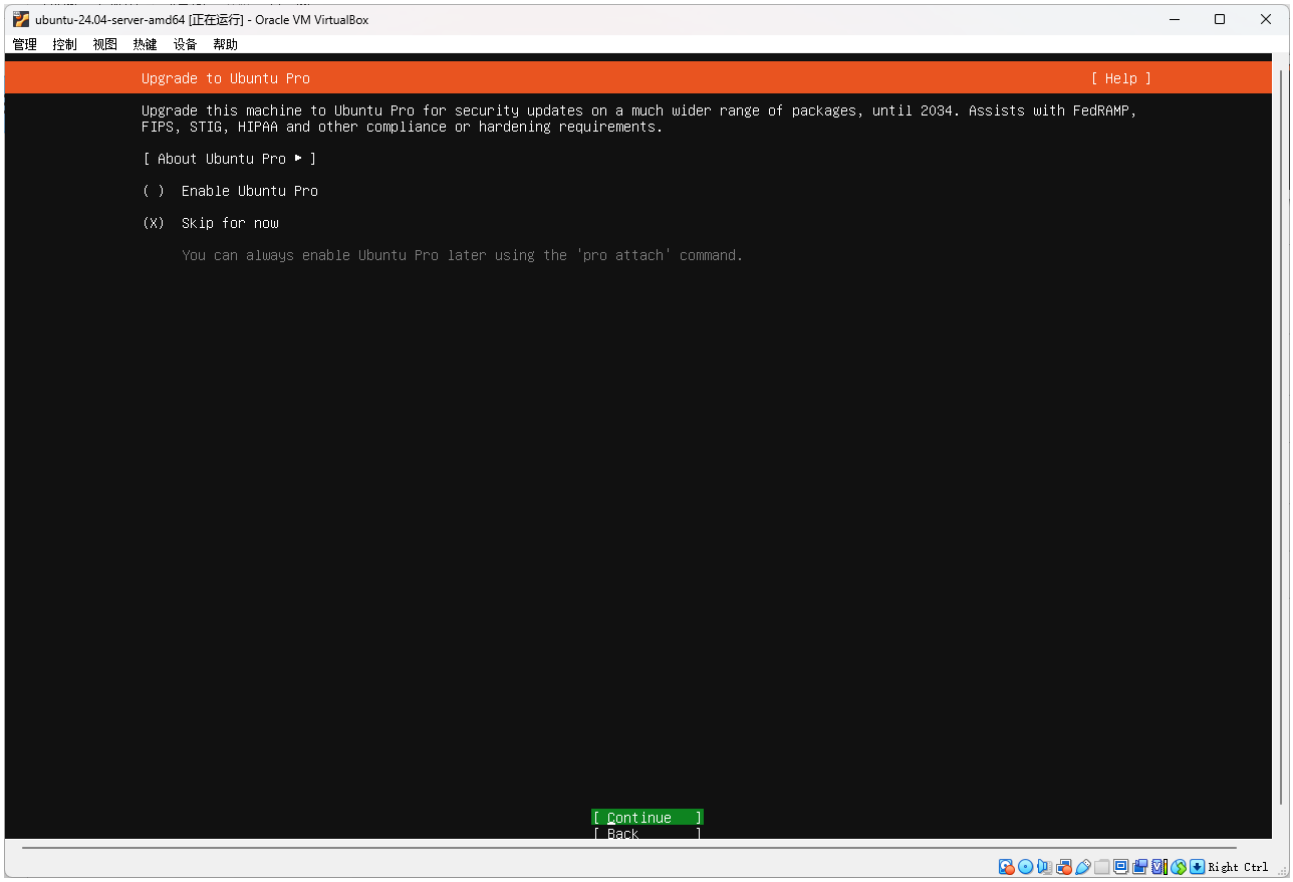

ubuntu-24.04-server-amd64 [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Storage configuration
[Help]
FILE SYSTEM SUMMARY
[/ 516.997G new ext4 new partition of local disk ▸]
[/boot 1.000G new ext4 new partition of local disk ▸]
[SWAP 2.000G new swap new partition of local disk ▸]
AVAILABLE DEVICES
No available devices
[Create software RAID (md) ▸]
[Create volume group (LVM) ▸]
USED DEVICES
Confirm destructive action
Selecting Continue below will begin the installation process and result in the loss of data on the disks selected to be formatted.
You will not be able to return to this or a previous screen once the installation has started.
Are you sure you want to continue?
[No]
[Continue]
[Done]
[Reset]
[Back]
Right Ctrl

2.2.9 配置用户名

vagrant/vagrant

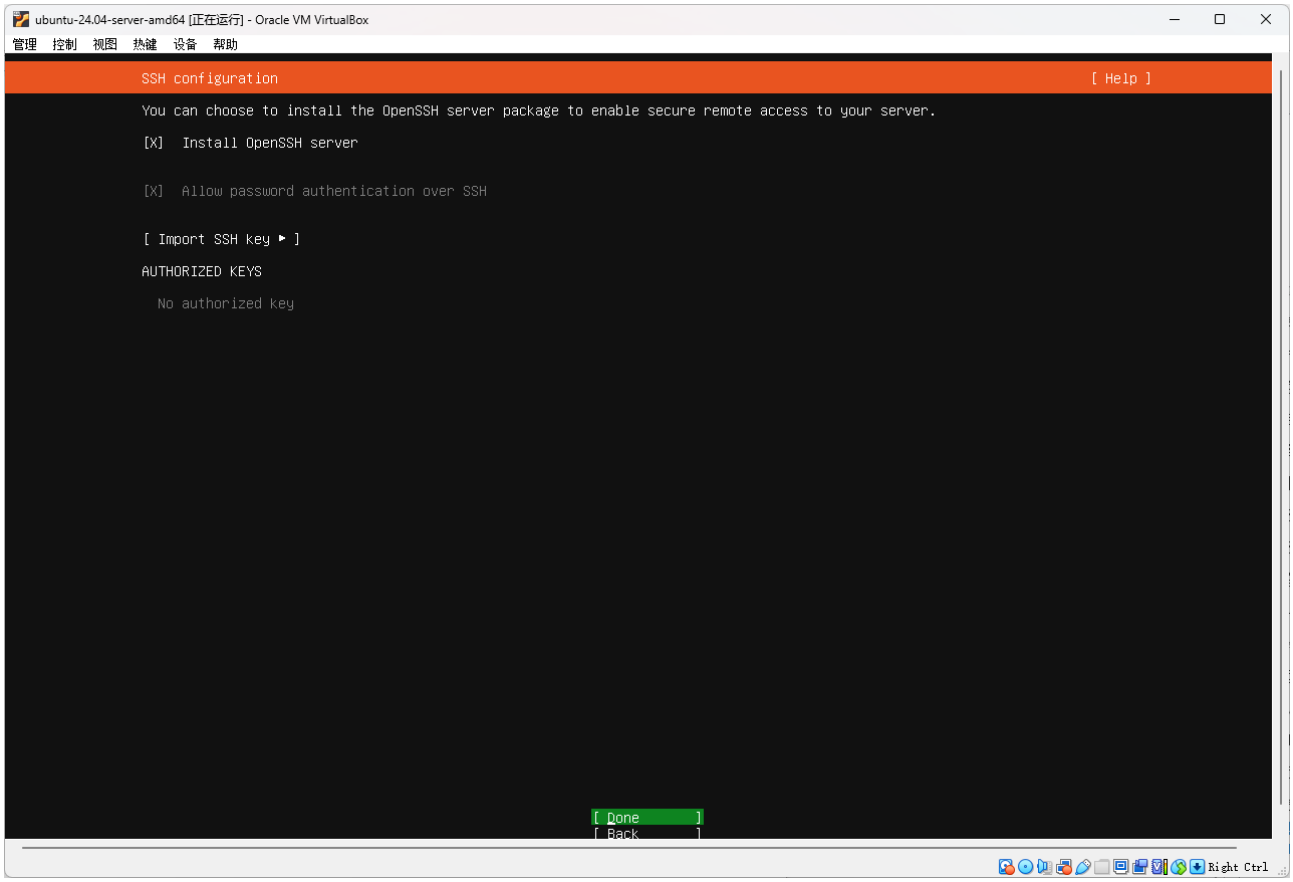


跳过更新 ubuntu pro

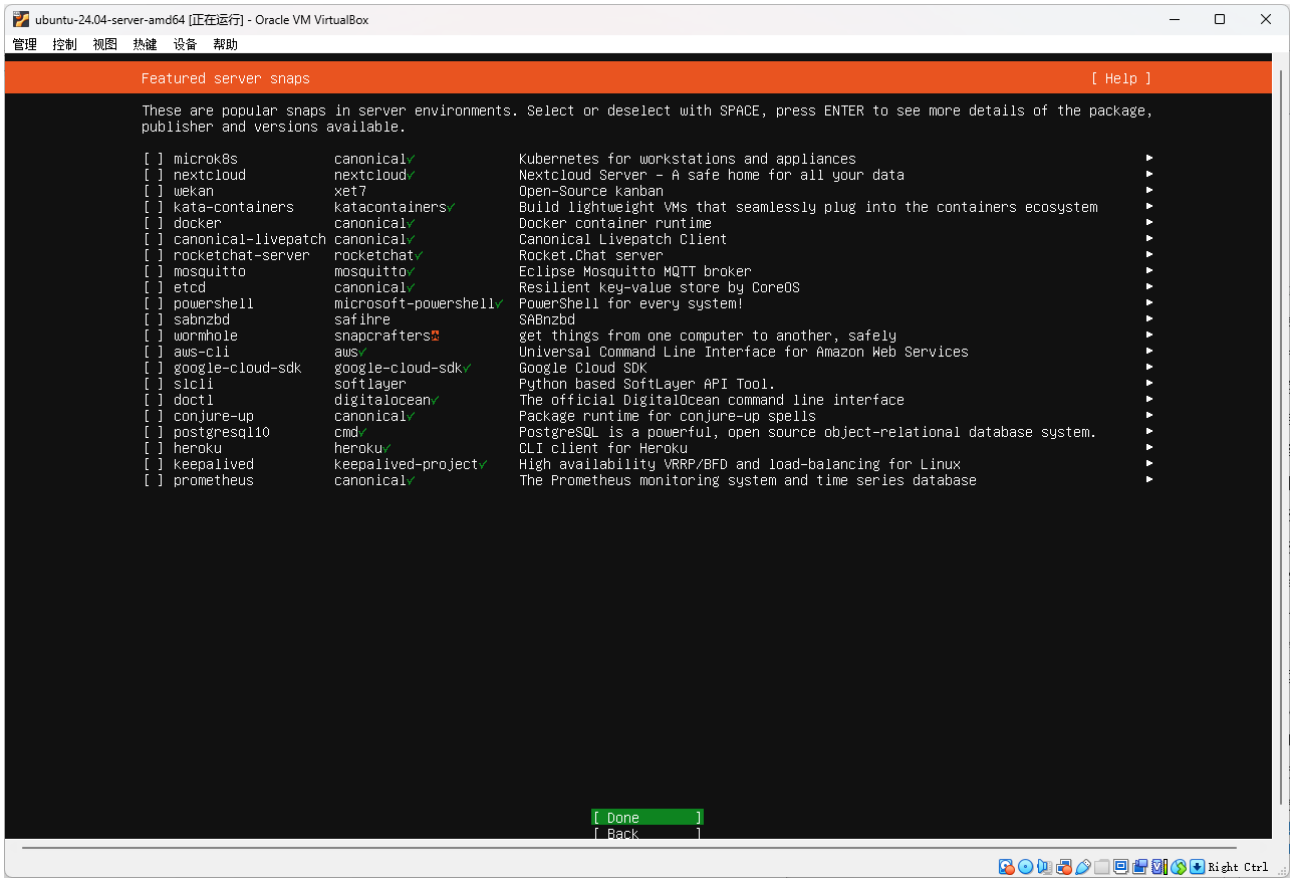


2.3.10 开启 SSH 配置

tab 选择，空格选中

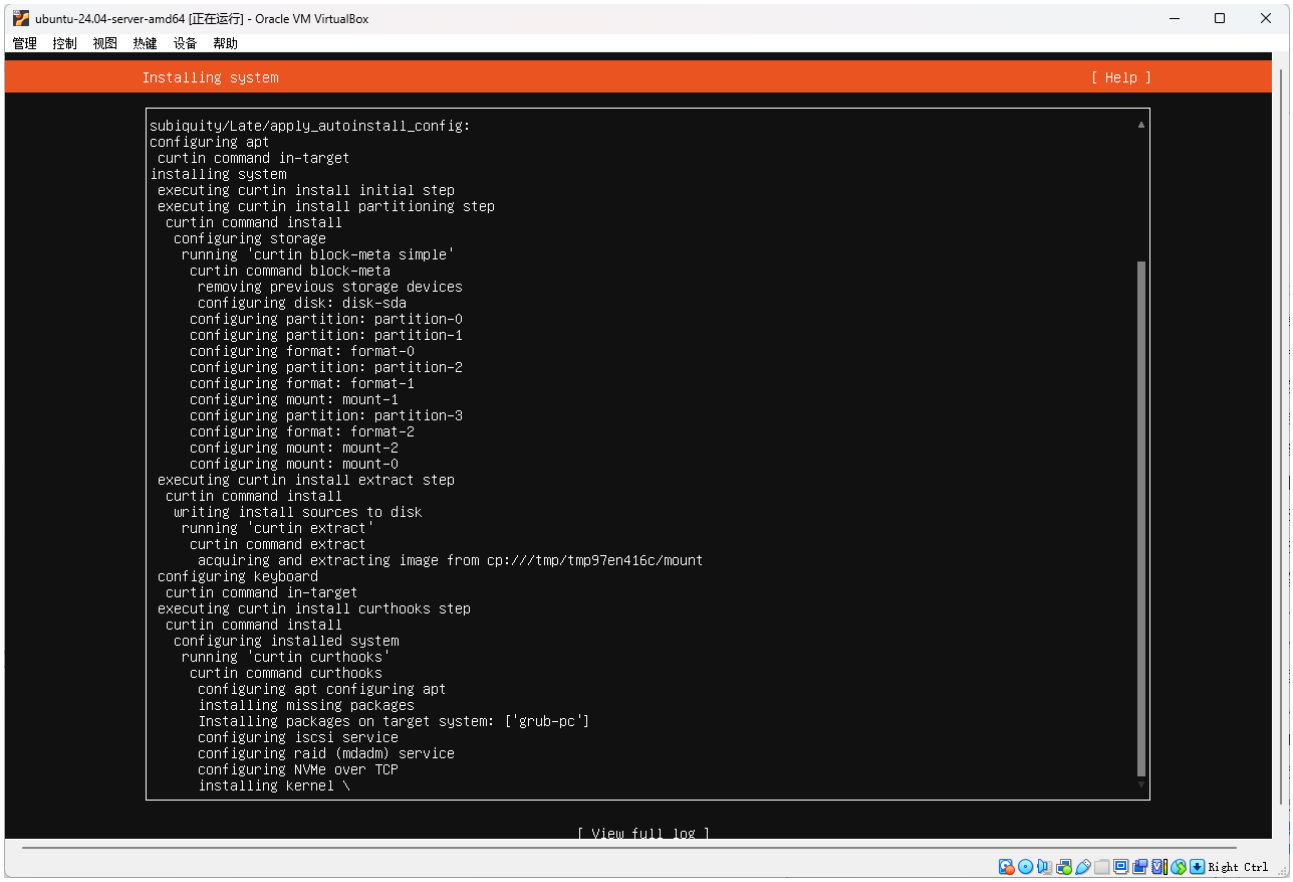


最小化安装 不选择安装任何其他软件



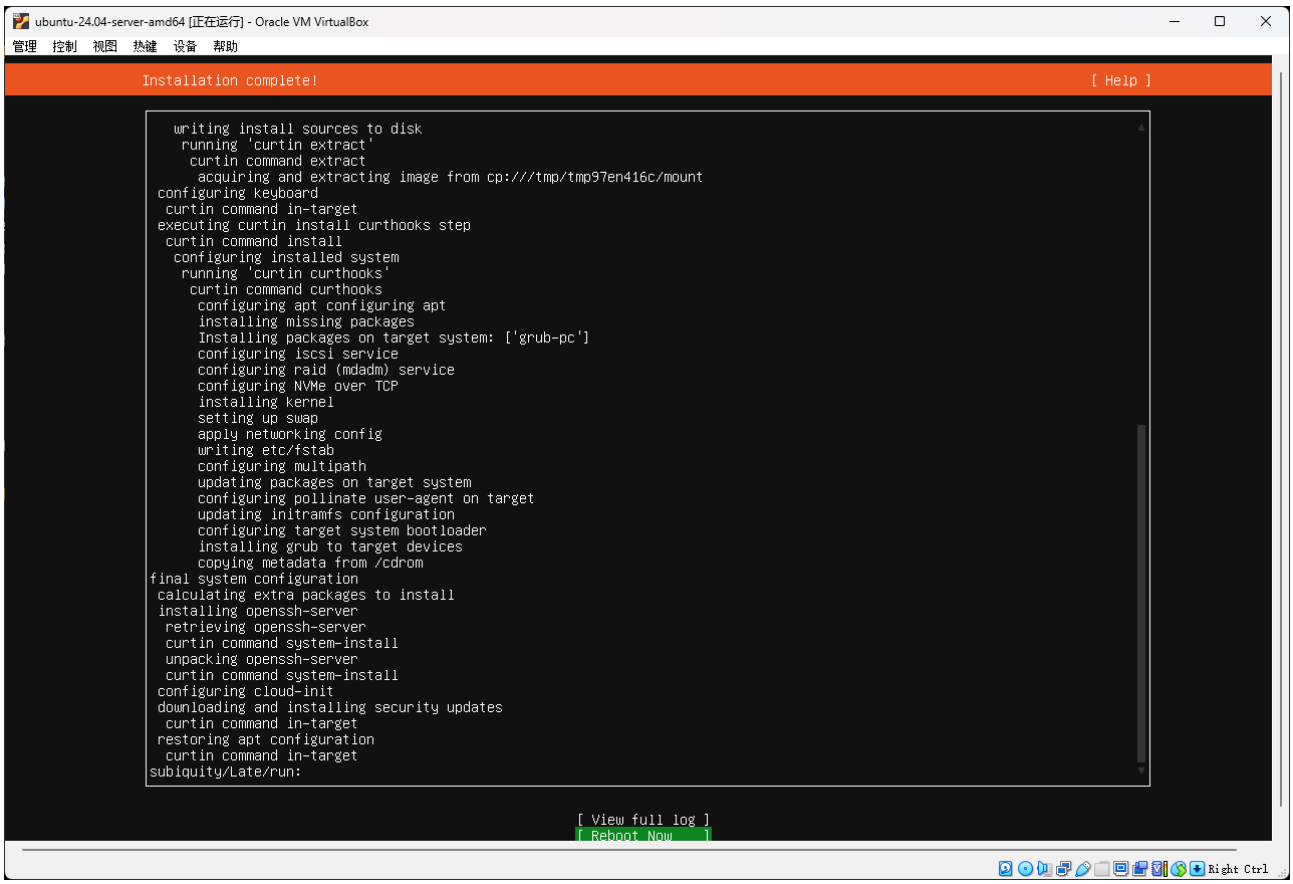
2.3.11 等待系统安装

等待系统安装



2.3.12 系统安装完毕

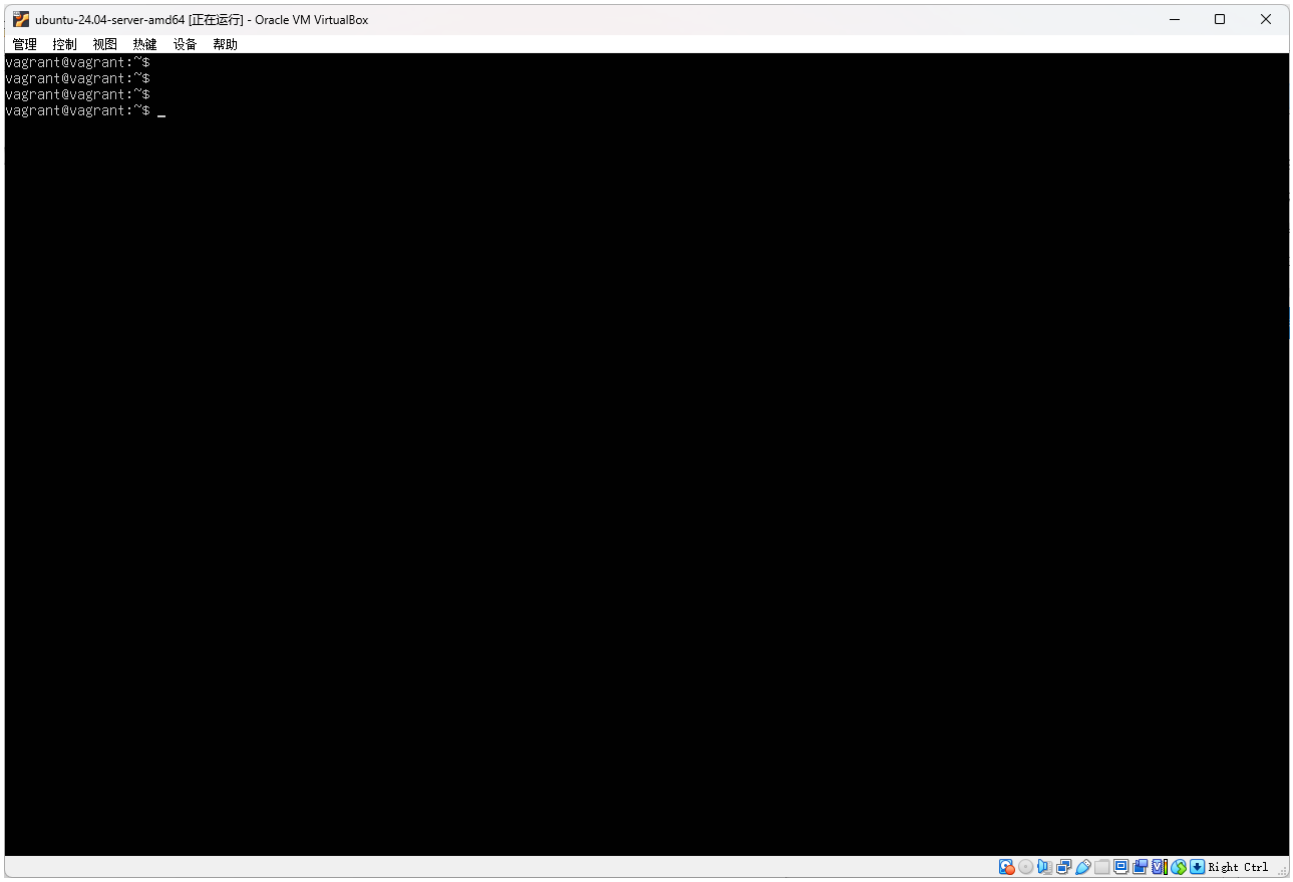
系统安装完毕选择重启



2.3 系统基础配置

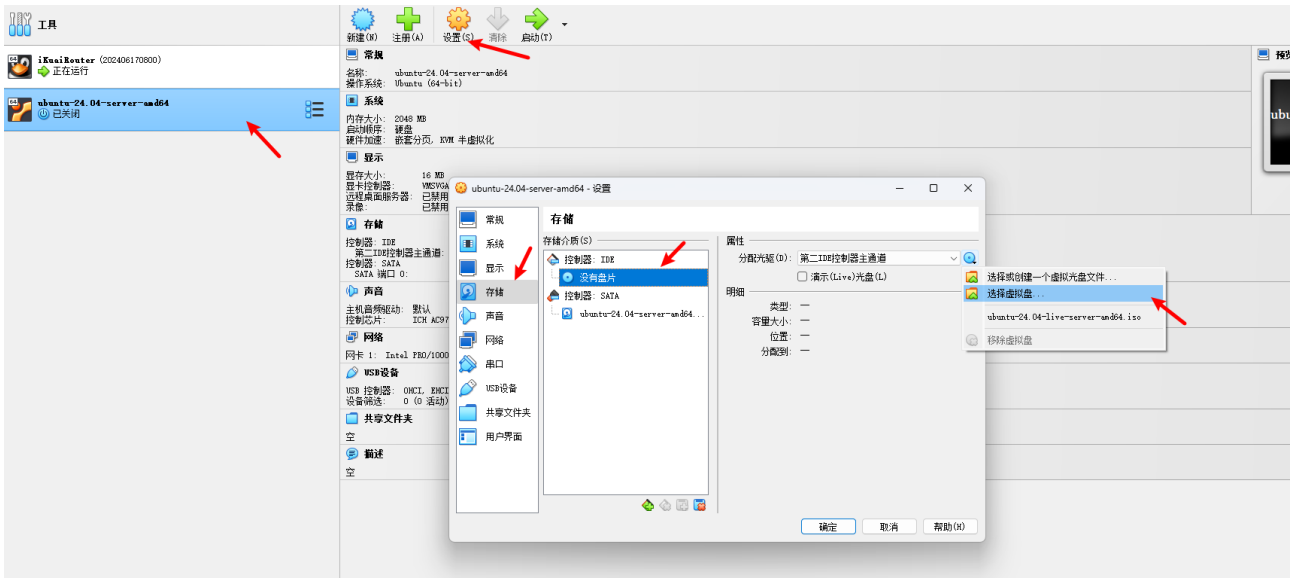
2.3.1 登陆系统

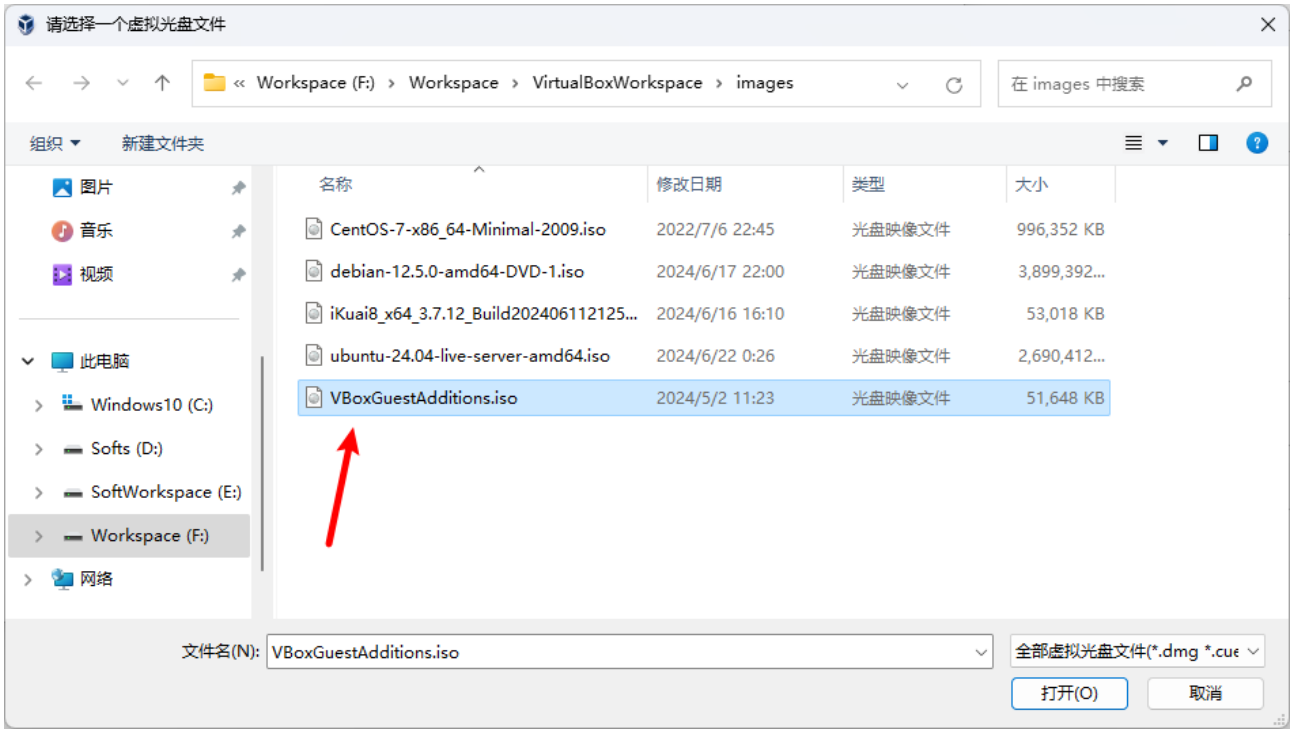
登陆系统

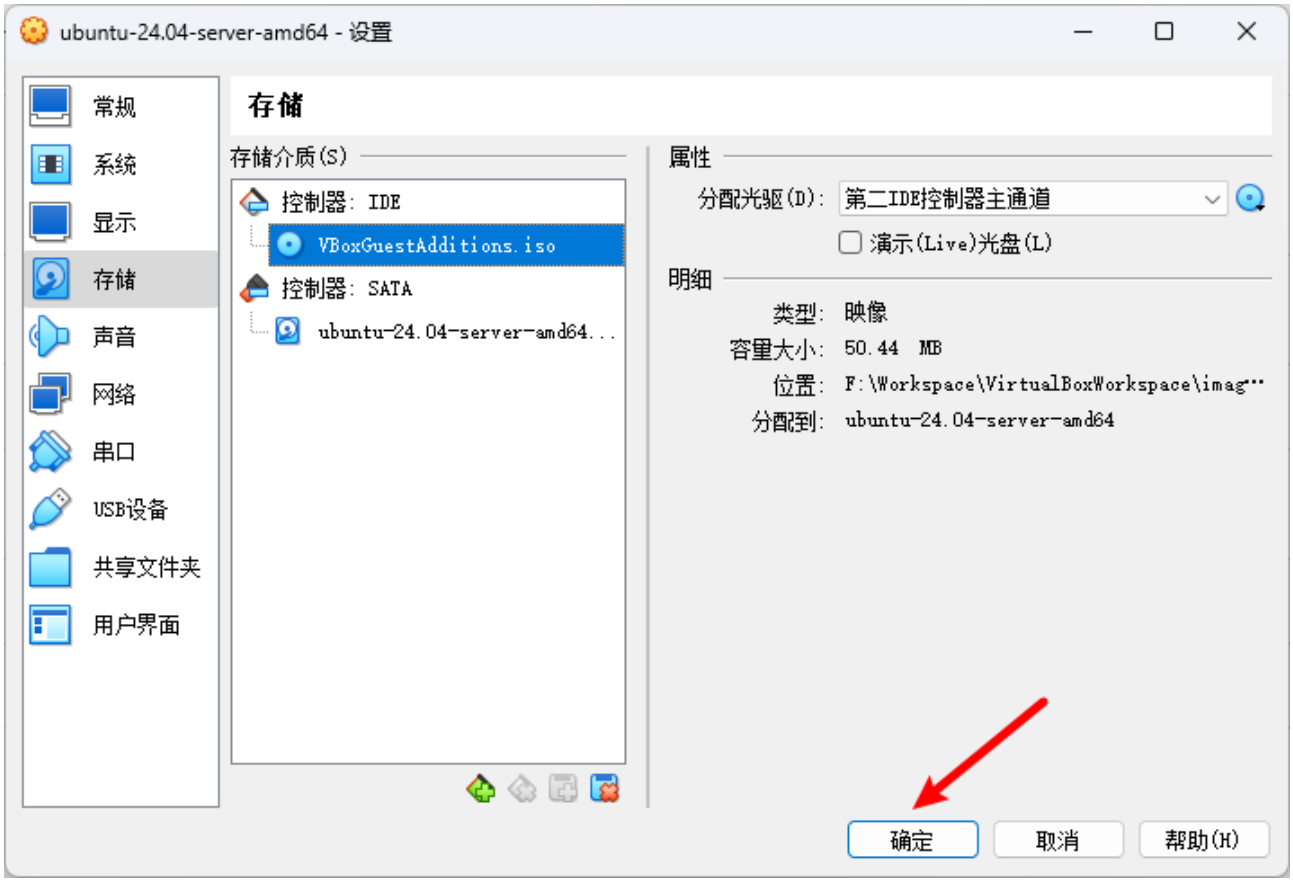


2.3.2 安装 VBoxGuestAdditions

关闭虚拟机 光驱加载 VBoxGuestAdditions.iso 镜像

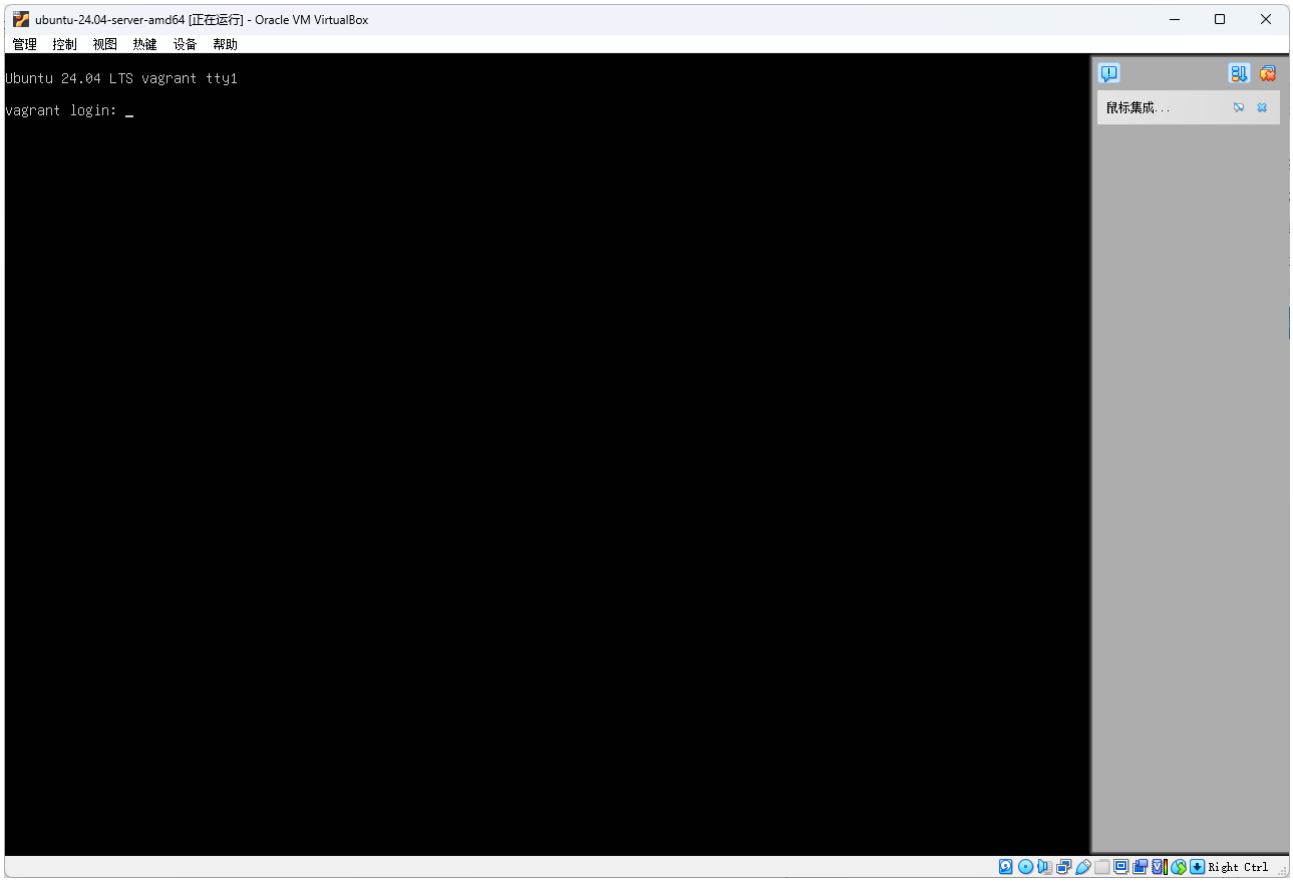



请选择一个虚拟光盘文件
Workspace (F:) › Workspace › VirtualBoxWorkspace › images
在 images 中搜索
组织
新建文件夹
图片
音乐
视频
此电脑
Windows10 (C:)
Softs (D:)
SoftWorkspace (E:)
Workspace (F:)
网络
名称
修改日期
类型
大小
CentOS-7-x86_64-Minimal-2009.iso 2022/7/6 22:45 光盘映像文件 996,352 KB
debian-12.5.0-amd64-DVD-1.iso 2024/6/17 22:00 光盘映像文件 3,899,392...
iKuai8_x64_3.7.12_Build202406112125... 2024/6/16 16:10 光盘映像文件 53,018 KB
ubuntu-24.04-live-server-amd64.iso 2024/6/22 0:26 光盘映像文件 2,690,412...
VBoxGuestAdditions.iso 2024/5/2 11:23 光盘映像文件 51,648 KB
文件名(N): VBoxGuestAdditions.iso
全部虚拟光盘文件(*.dmg *.cue
打开(O)
取消


ubuntu-24.04-server-amd64 - 设置
常规
系统
显示
存储
声音
网络
串口
USB设备
共享文件夹
用户界面
存储
存储介质(S)
控制器: IDE
VBoxGuestAdditions.iso
控制器: SATA
ubuntu-24.04-server-amd64...
属性
分配光驱(D): 第二IDE控制器主通道
演示(Live)光盘(L)
明细
类型: 映像
容量大小: 50.44 MB
位置: F:\Workspace\VirtualBoxWorkspace\imag...
分配到: ubuntu-24.04-server-amd64
确定
取消
帮助(H)

开机启动

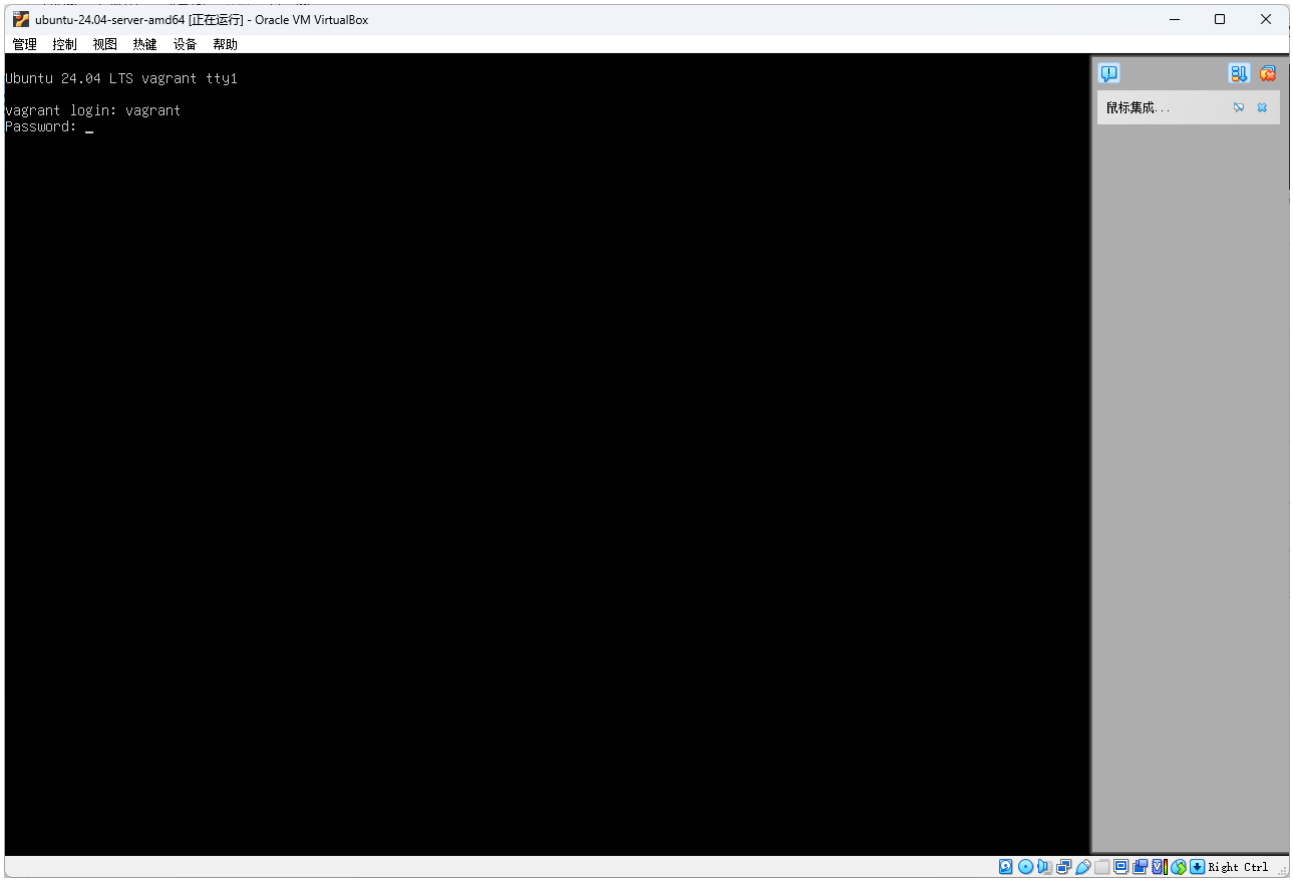

新建(N)
注册(A)
设置(S)
清除
启动(T)
常规
名称: ubuntu-24.04-server-amd64
操作系统: Ubuntu (64-bit)
系统
内存大小: 2048 MB
启动顺序: 硬盘
硬件加速: 嵌套分页, KVM 半虚拟化
显示
显存大小: 16 MB
显卡控制器: VMSVGA
远程桌面服务器: 已禁用
录像: 已禁用
存储
控制器: IDE
第二IDE控制器主通道: [光驱] VBoxGuestAdditions.iso (50.44 MB)
控制器: SATA
SATA 端口 0: ubuntu-24.04-server-amd64.vdi (普通, 520.00 GB)
声音
主机音频驱动: 默认
控制芯片: ICH AC97
网络
网卡 1: Intel PRO/1000 MT 桌面 (桥接网络, Intel(R) Wi-Fi 6E AX210 160MHz)
USB设备
USB 控制器: OHCI, EHCI
设备筛选: 0 (0 活动)
共享文件夹
空
描述
空

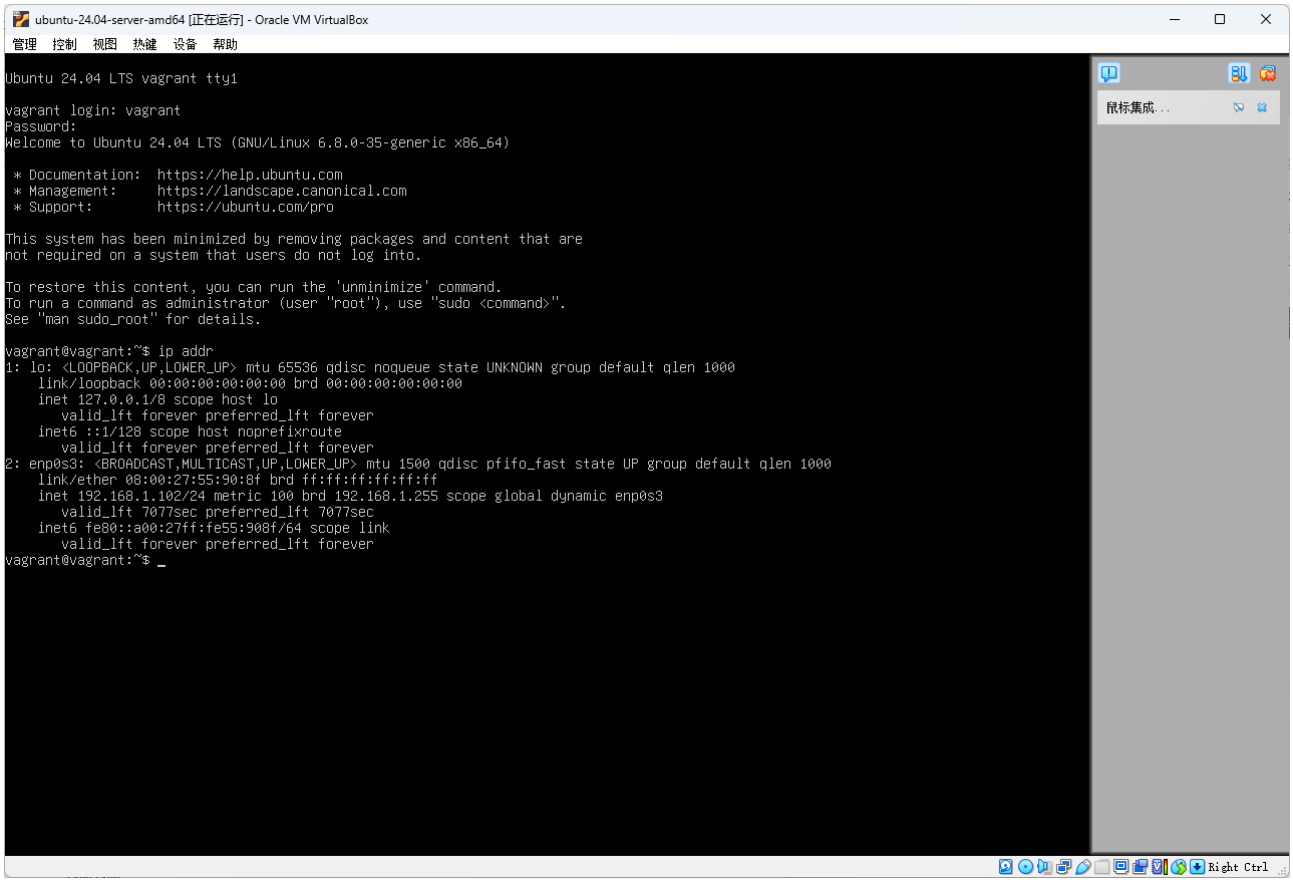

ubuntu-24.04-server-amd64 [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Ubuntu 24.04 LTS vagrant tty1
vagrant login: _
鼠标集成...
Right Ctrl

登陆系统 查看系统当前 IPv4 地址

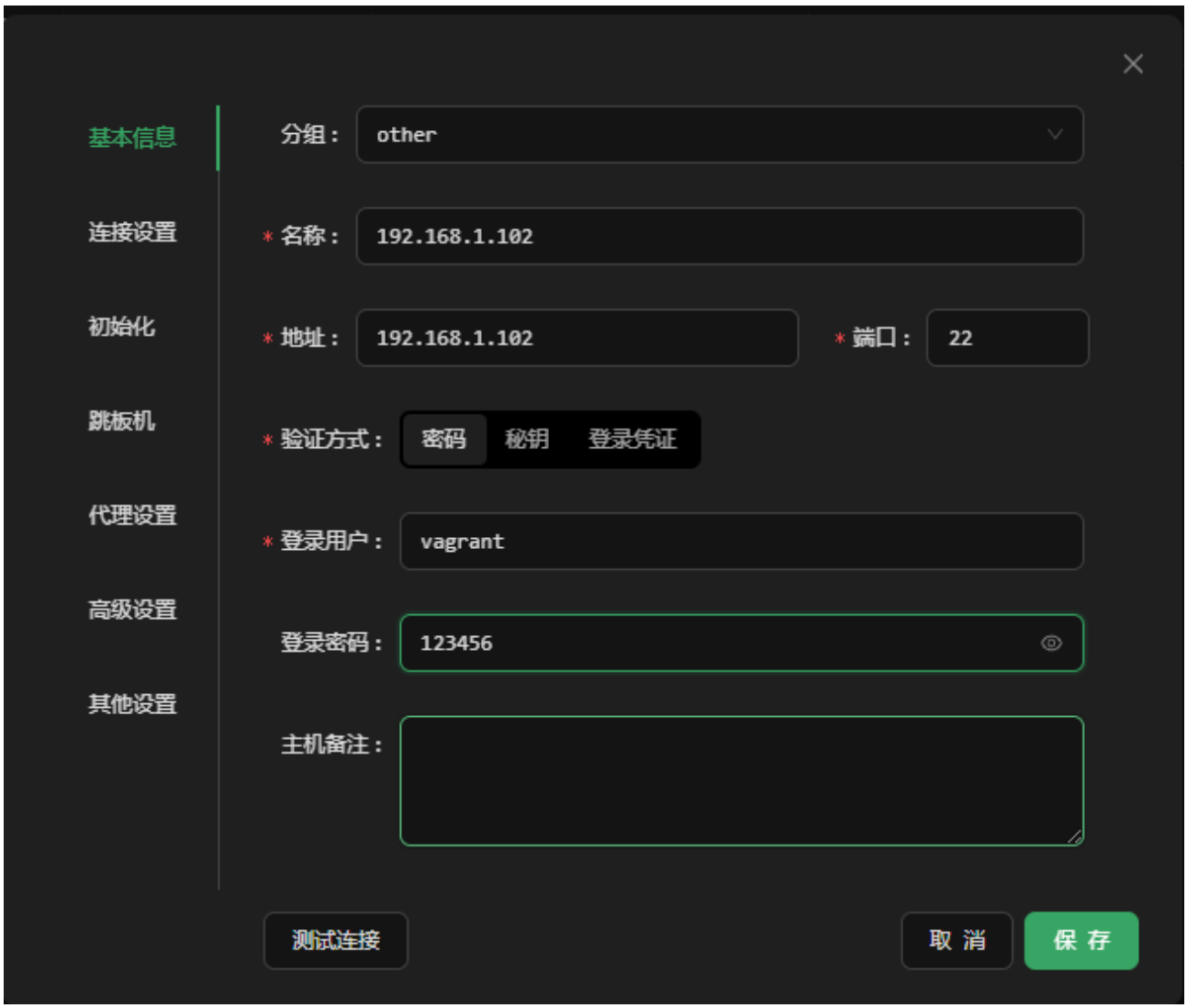
vagrant/vagrant

ip addr

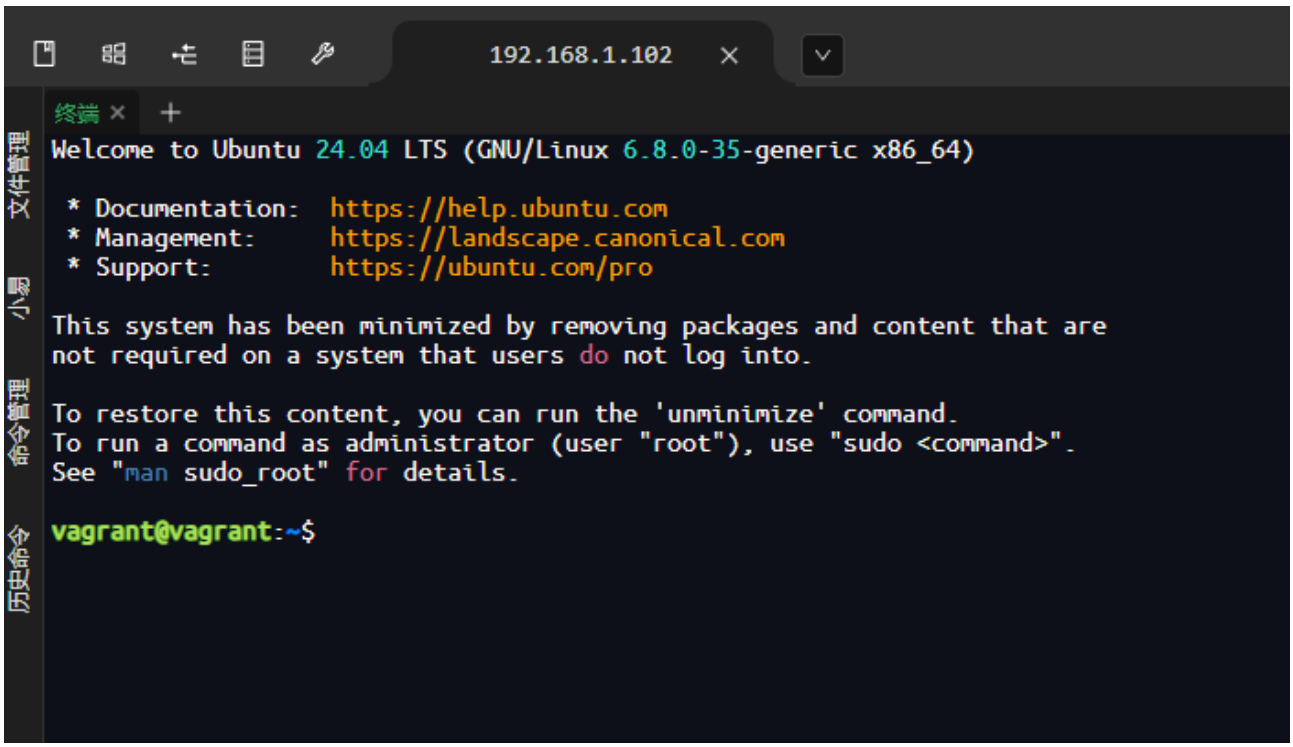




使用 ssh 工具登陆系统


基本信息
连接设置
初始化
跳板机
代理设置
高级设置
其他设置
分组：
other
* 名称：
192.168.1.102
* 地址：
192.168.1.102
* 端口：
22
* 验证方式：
密码
秘钥
登录凭证
* 登录用户：
vagrant
登录密码：
123456
主机备注：
测试连接
取 消
保 存

登陆成功



挂载镜像到文件系统

```
sudo mkdir /mnt/cdrom
sudo mount /dev/cdrom /mnt/cdrom
```

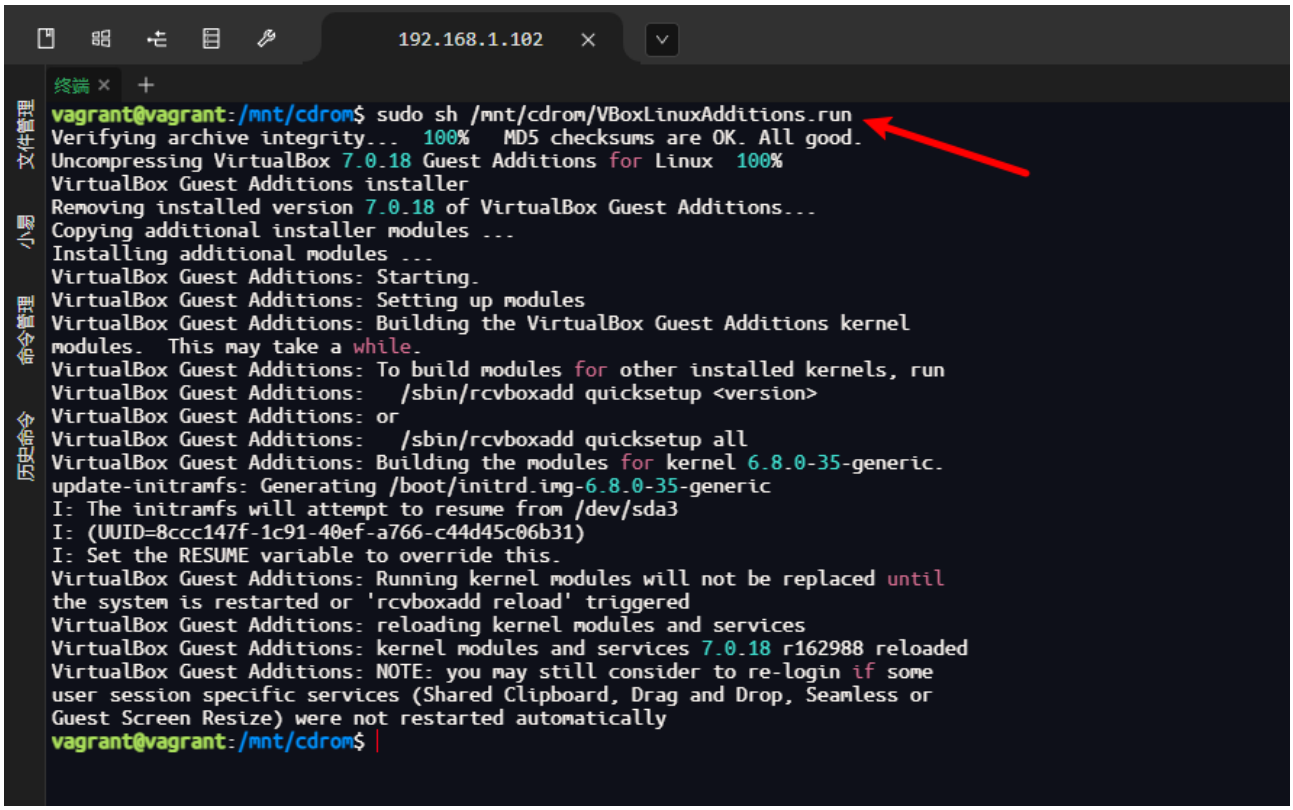
```
192.168.1.102
终端
vagrant@vagrant:~$ sudo mkdir /mnt/cdrom
vagrant@vagrant:~$ sudo mount /dev/cdrom /mnt/cdrom
mount: /mnt/cdrom: WARNING: source write-protected, mounted read-only.
vagrant@vagrant:~$
vagrant@vagrant:~$ cd /mnt/cdrom/
vagrant@vagrant:/mnt/cdrom$ ll
total 41634
dr-xr-xr-x 5 root root     2570 May  2 09:22 ./
drwxr-xr-x 3 root root     4096 Jun 23 09:02 ../
-r--r--r-- 1 root root     1048 Jul 26  2023 AUTORUN.INF
dr-xr-xr-x 2 root root     1252 May  2 09:22 NT3x/
dr-xr-xr-x 2 root root     2828 May  2 09:22 OS2/
-r--r--r-- 1 root root      592 May  2 09:22 TRANS.TBL
-r--r--r-- 1 root root  2203708 May  2 08:39 VBoxDarwinAdditions.pkg
-r-xr-xr-x 1 root root     4224 May  2 08:39 VBoxDarwinAdditionsUninstall.tool*
-r-xr-xr-x 1 root root  6306247 May  2 08:36 VBoxLinuxAdditions.run*
-r--r--r-- 1 root root  9410560 May  2 08:35 VBoxSolarisAdditions.pkg
-r-xr-xr-x 1 root root 15401856 May  2 09:21 VBoxWindowsAdditions-amd64.exe*
-r-xr-xr-x 1 root root  9041880 May  2 08:59 VBoxWindowsAdditions-x86.exe*
-r-xr-xr-x 1 root root   234168 May  2 08:36 VBoxWindowsAdditions.exe*
-r-xr-xr-x 1 root root     6848 May  2 08:35 autorun.sh*
dr-xr-xr-x 2 root root     1468 May  2 09:22 cert/
-r-xr-xr-x 1 root root     5096 May  2 08:35 runasroot.sh*
-r--r--r-- 1 root root      261 Jul 26  2023 windows11-bypass.reg
vagrant@vagrant:/mnt/cdrom$
```

安装 bzip2 tar gcc make perl

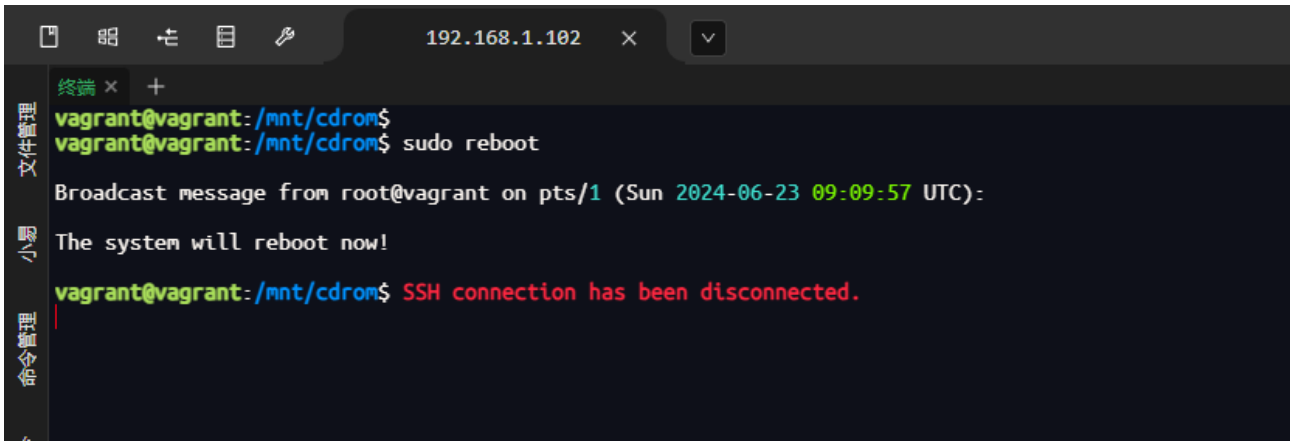
sudo apt-get install -y bzip2 tar gcc make perl

```
192.168.1.102
终端
vagrant@vagrant:/mnt/cdrom$ sudo apt-get install -y bzip2 tar gcc make perl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
bzip2 is already the newest version (1.0.8-5.1).
tar is already the newest version (1.35+dfsg-3build1).
perl is already the newest version (5.38.2-3.2build2).
perl set to manually installed.
The following additional packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu cpp cpp-13 cpp-13-x86-64-linux-gnu cpp-x86-64-linux-gnu gc
  libctf0 libgcc-13-dev libgomp1 libgprofng0 libhwasan0 libisl23 libitm1 libjansson4 liblsan0 libmpc3 libquadma
Suggested packages:
  binutils-doc gprofng-gui cpp-doc gcc-13-locales cpp-13-doc gcc-multilib autoconf automake libtool flex bison
The following NEW packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu cpp cpp-13 cpp-13-x86-64-linux-gnu cpp-x86-64-linux-gnu gc
  libctf-nobfd0 libctf0 libgcc-13-dev libgomp1 libgprofng0 libhwasan0 libisl23 libitm1 libjansson4 liblsan0 lib
0 upgraded, 32 newly installed, 0 to remove and 29 not upgraded.
Need to get 51.9 MB of archives.
After this operation, 183 MB of additional disk space will be used.
Get:1 http://mirrors.tuna.tsinghua.edu.cn/ubuntu noble/main amd64 libjansson4 amd64 2.14-2build2 [32.8 kB]
Get:2 http://mirrors.tuna.tsinghua.edu.cn/ubuntu noble/main amd64 binutils-common amd64 2.42-4ubuntu2 [239 kB]
Get:3 http://mirrors.tuna.tsinghua.edu.cn/ubuntu noble/main amd64 libsframe1 amd64 2.42-4ubuntu2 [14.8 kB]
Get:4 http://mirrors.tuna.tsinghua.edu.cn/ubuntu noble/main amd64 libbinutils amd64 2.42-4ubuntu2 [572 kB]
Get:5 http://mirrors.tuna.tsinghua.edu.cn/ubuntu noble/main amd64 libctf-nobfd0 amd64 2.42-4ubuntu2 [97.1 kB]
Get:6 http://mirrors.tuna.tsinghua.edu.cn/ubuntu noble/main amd64 libctf0 amd64 2.42-4ubuntu2 [94.5 kB]
Get:7 http://mirrors.tuna.tsinghua.edu.cn/ubuntu noble/main amd64 libgprofng0 amd64 2.42-4ubuntu2 [851 kB]
Get:8 http://mirrors.tuna.tsinghua.edu.cn/ubuntu noble/main amd64 binutils-x86-64-linux-gnu amd64 2.42-4ubuntu2
Get:9 http://mirrors.tuna.tsinghua.edu.cn/ubuntu noble/main amd64 binutils amd64 2.42-4ubuntu2 [18.0 kB]
Get:10 http://mirrors.tuna.tsinghua.edu.cn/ubuntu noble/main amd64 gcc-13-base amd64 13.2.0-23ubuntu4 [49.0 kB]
```

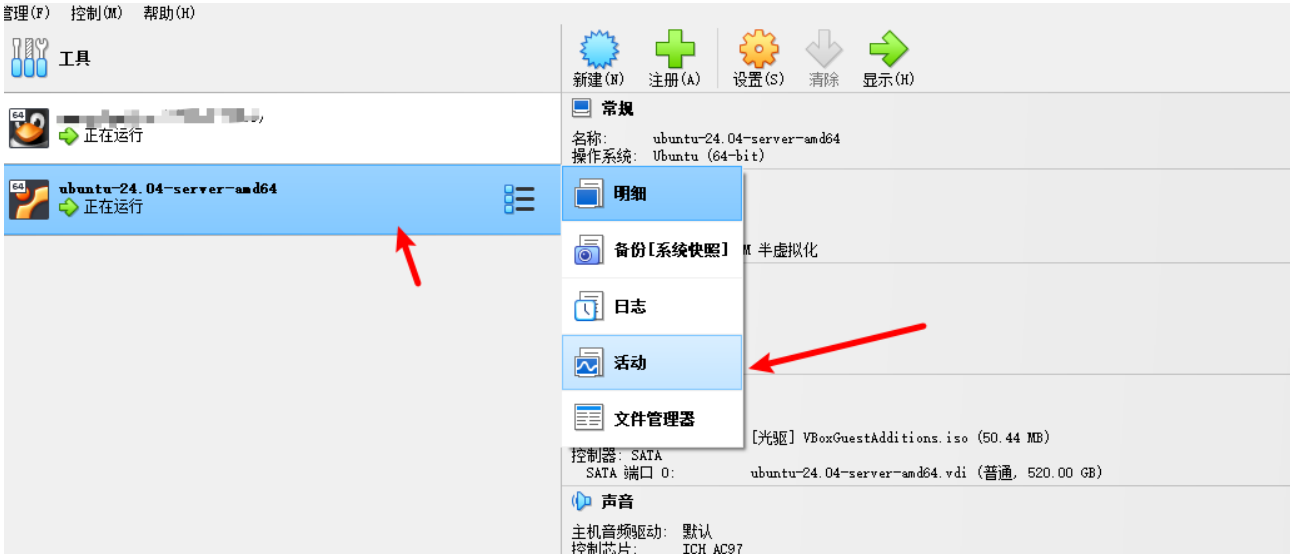
```
sudo sh /mnt/cdrom/VBoxLinuxAdditions.run
```

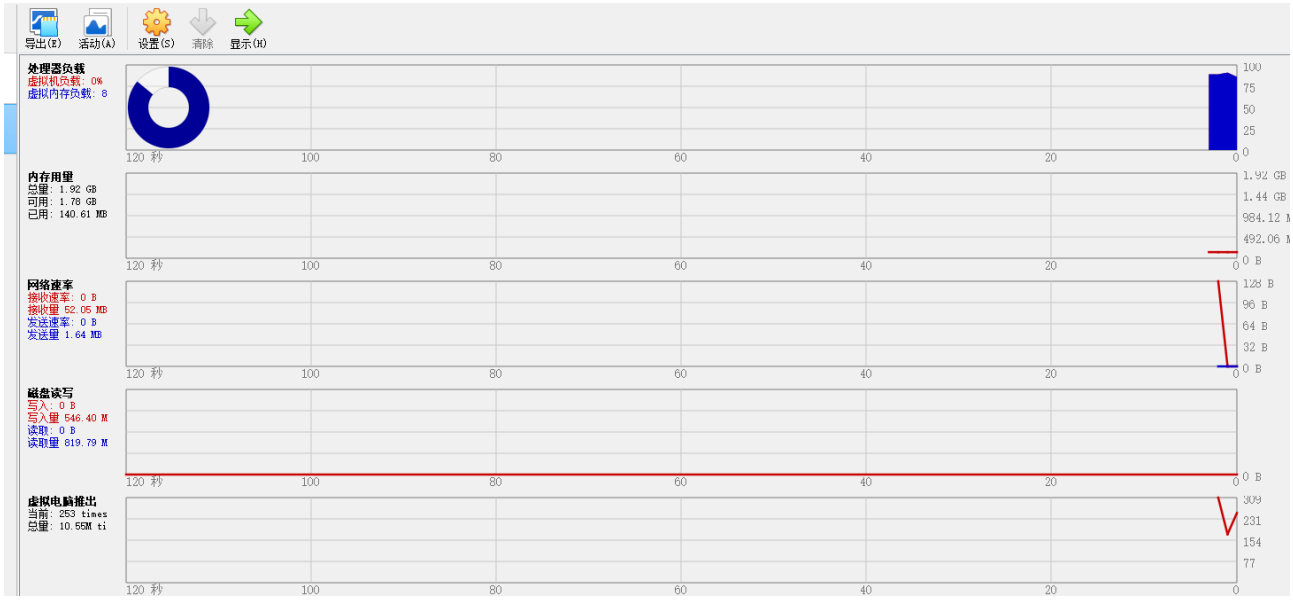


重启 reboot



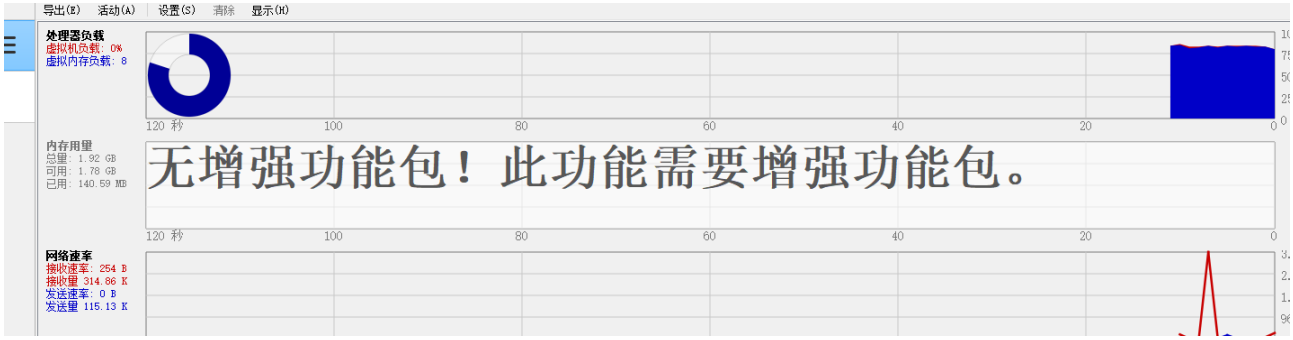
虚拟机->活动





内存用量不显示“无增强功能包”则表示安装成功 VBoxGuestAdditions 安装成功

如下图所示：



2.3.3 激活 root 帐户

设置 root 密码 vagrant

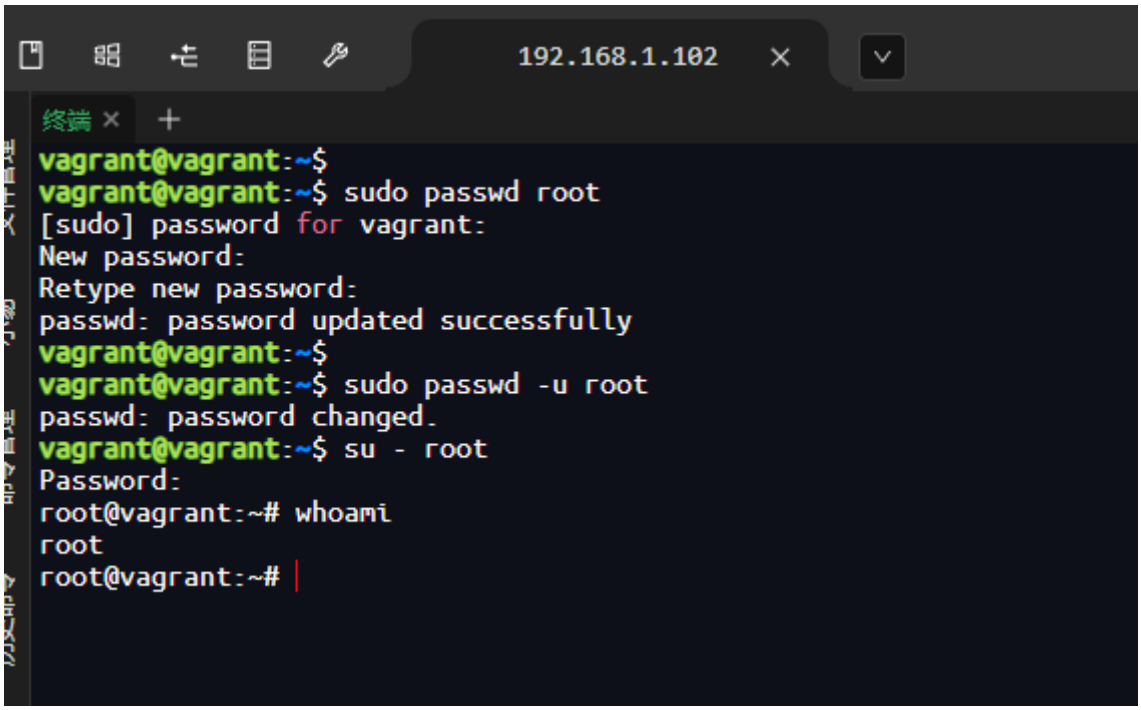
sudo passwd root

启用 root 帐户

sudo passwd -u root

切换 root 帐户

su - root

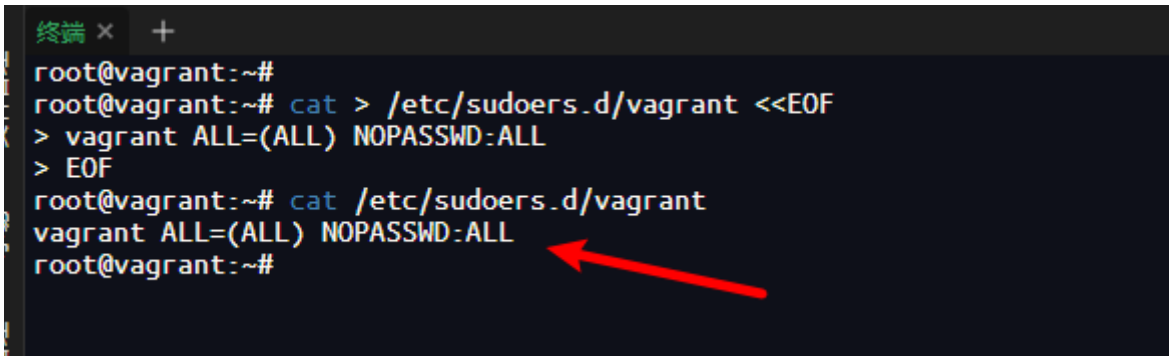


2.3.4 设置 vagrant 用户无密码运行 sudo

cat > /etc/sudoers.d/vagrant <<EOF

vagrant ALL=(ALL) NOPASSWD:ALL

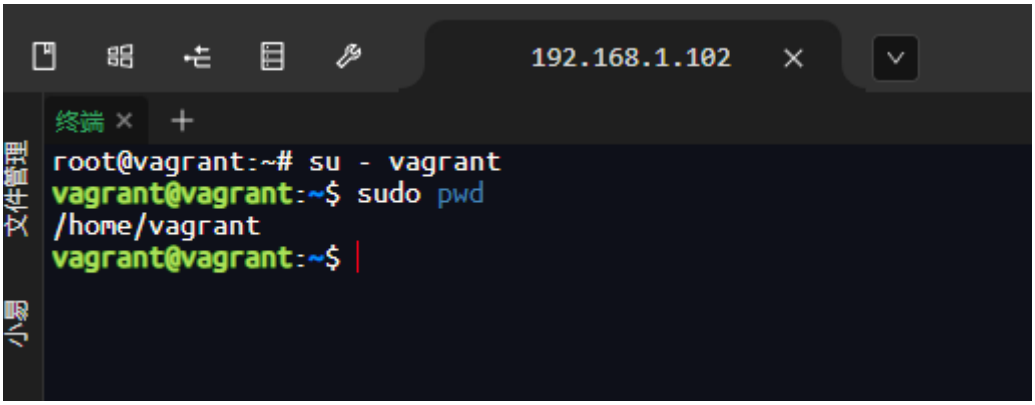
EOF



su – vagrant

sudo pwd

测试 vagrant 用户是否无需输入输入密码执行 sudo



2.3.5 安装 ssh 公钥

vagarnt 官方提供的密钥地址：

https://github.com/hashicorp/vagrant/tree/main/keys

公钥文件：vagrant.pub

```
ssh-rsa
AAAAB3NzaC1yc2EAAAABIwAAAQEA6NF8iallvQVp22WDkTkyrtvp9eWW6A8YVr+kz4TjGYe7gHzIw+ni
NltGEFHzD8+v1I2YJ6oXevct1YeS0o9HZyN1Q9qgCgzUFtdOKLv6IedplqoPkcmF0aYet2PkEDo3MlTB
ckFXPITAMzF8dJSIFo9D8HfdOV0IAdx4O7PtixWKn5y2hMNG0zQPyUecp4pzC6kivAIhyfHilFR61RGL
+GPXQ2MWZWFYbAGjyiYJnAmCP3NOTd0jMZEnDkbUvxhMmBYSdETk1rRgm+R4LOzFUGaHqHDLKLX+FIPK
cF96hrucXzcWyLbIbEgE98OHlnVYCzRdK8jlqm8tehUc9c9WhQ== vagrant insecure public key
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIN1YdxBpNlzxDqfJyw/QKow1F+wvG9hXGoqiysfJOn5Y
vagrant insecure public key
```

私钥：

vagrant.key.rsa

```
-----BEGIN RSA PRIVATE KEY-----

MIIEogIBAAKCAQEA6NF8iallvQVp22WDkTkyrtvp9eWW6A8YVr+kz4TjGYe7gHzI

w+niNltGEFHzD8+v1I2YJ6oXevct1YeS0o9HZyN1Q9qgCgzUFtdOKLv6IedplqoP

kcmF0aYet2PkEDo3MlTBckFXPITAMzF8dJSIFo9D8HfdOV0IAdx4O7PtixWKn5y2

hMNG0zQPyUecp4pzC6kivAIhyfHilFR61RGL+GPXQ2MWZWFYbAGjyiYJnAmCP3NO

Td0jMZEnDkbUvxhMmBYSdETk1rRgm+R4LOzFUGaHqHDLKLX+FIPKcF96hrucXzcW

yLbIbEgE98OHlnVYCzRdK8jlqm8tehUc9c9WhQIBIwKCAQEA4iqWPJXtzZA68mKd

ELs4jJsdyky+ewdZeNds5tjcnHU5zUYE25K+ffJED9qUWICcLZDc81TGWjHyAqD1

Bw7XpgUwFgeUJwUlzQurAv+/ySnxiwuaGJfhFM1CaQHzfXphgVml+fZUvnJUTvzf

TK2Lg6EdbUE9TarUlBf/xPfuEhMSlIE5keb/Zz3/LUlRg8yDqz5w+QWVJ4utnKnK

iqwZN0mwpwU7YSyJhlT4YV1F3n4YjLswM5wJs2oqm0jssQu/BT0tyEXNDYBLEF4A

sClaWuSJ2kjq7KhrrYXzagqhnSei9ODYFShJu8UWVec3Ihb5ZXlzO6vdNQ1J9Xsf

4m+2ywKBgQD6qFxx/Rv9CNN96l/4rb14HKirC2o/orApiHmHDsURs5rUKDx0f9iP
```

```
cXN7S1uePXuJRK/5hsubaOCx3Owd2u9gD6Oq0CsMkE4CUSiJcYrMANtx54cGH7Rk
EjFZxK8xAv1ldELEyxrFqkbE4BKd8QOt414qjvTGyAK+OLD3M2QdCQKBgQDtx8pN
CAxR7yhHbIWT1AH66+XWN8bXq7l3RO/ukeaci98JfkbkxURZhtxV/HHuvUhnPLdX
3TwygPBYZFNo4pzVEhzWoTtnEtrFueKxyc3+LjZpuo+mBlQ6ORtfgkr9gBVphXZG
YEzkCD3lVdl8L4cw9BVpKrJCs1c5taGjDgdInQKBgHm/fVvv96bJxc9x1tffXAcj
3OVdUN0UgXNCSaf/3A/phbeBQe9xS+3mpc4r6qvx+iy69mNBeNZ0xOitIjpjBo2+
dBEjSBwLk5q5tJqHmy/jKMJL4n9ROlx93XS+njxgibTvU6Fp9w+NOFD/HvxB3Tcz
6+jJF85D5BNAG3DBMKBjAoGBAOAxZvgsKN+JuENXsST7F89Tck2iTcQIT8g5rwWC
P9Vt74yboe2kDT531w8+egz7nAmRBKNM751U/95P9t88EDacDI/Z2OwnuFQHCPDF
llYOUI+SpLJ6/vURRbHSnnn8a/XG+nzedGH5JGqEJNQsz+xT2axM0/W/CRknmGaJ
kda/AoGANWrLCz708y7VYgAtW2Uf1DPOIYMdvo6fxIB5i9ZfISgcJ/bbCUkFrhoH
+vq/5CIWxCPp0f85R4qxxQ5ihxJ0YDQT9Jpx4TMss4PSavPaBH3RXow5Ohe+bYoQ
NE5OgEXk2wVfZczCZpigBKbKZHNYcelXtTt/nP3rsCuGcM4h53s=
-----END RSA PRIVATE KEY-----
```

vagrant.key.ed25519

```
-----BEGIN OPENSSH PRIVATE KEY-----
b3BlbnNzaC1rZXktdjEAAAAABG5vbmUAAAAEbm9uZQAAAAAAAAABAAAAMwAAAAtzc2gtZW
QyNTUxOQAAACDdWHcQaTZc8Q6nycsP0CqMNRfsLxvYVxqKosrHyTp+WAAAAJj2TBMT9kwT
EwAAAAtzc2gtZWQyNTUxOQAAACDdWHcQaTZc8Q6nycsP0CqMNRfsLxvYVxqKosrHyTp+WA
AAAEAveRHRHSCjIxbNKHDRzezD0U3R3UEEmS7R33fzvPQAD91YdxBpNlzxDqfJyw/QKow1
F+wvG9hXGoqiysfJOn5YAAAAEHNwb3hAdmFncmFudC1kZXYBAgMEBQ==
-----END OPENSSH PRIVATE KEY-----
```

切换 root 用户

su – root

安装 vagrant 提供的 ssh 公钥

mkdir -p /home/vagrant/.ssh

chmod 0700 /home/vagrant/.ssh

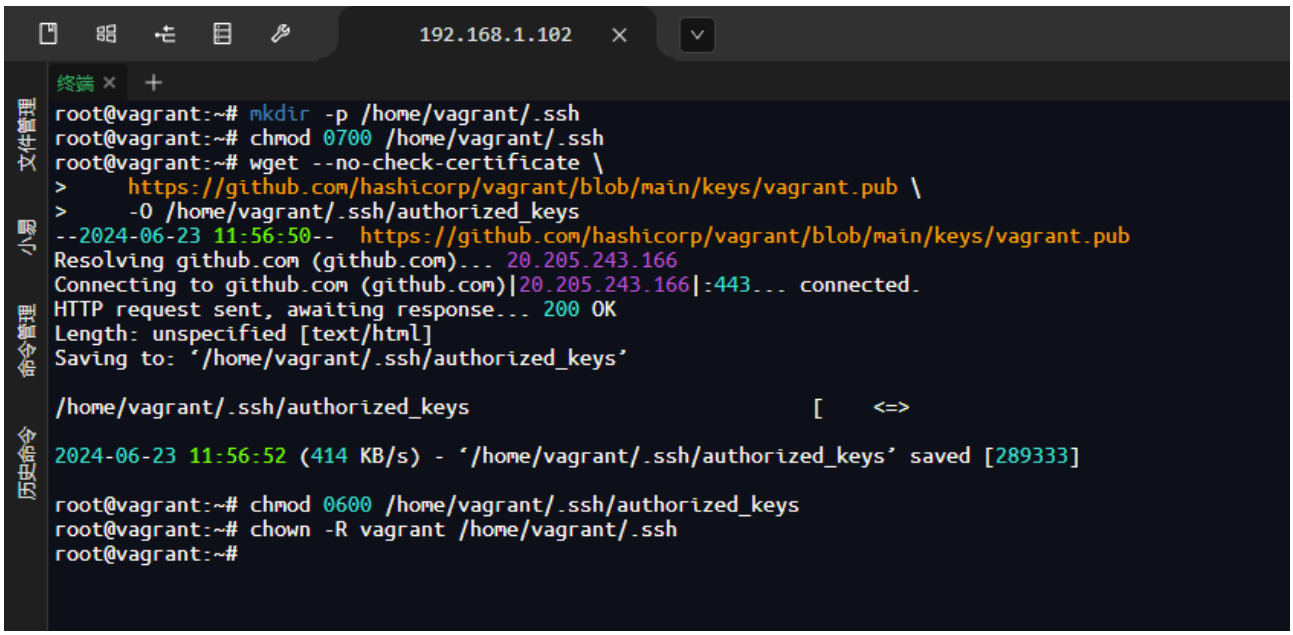
wget --no-check-certificate \

    https://raw.githubusercontent.com/hashicorp/vagrant/main/keys/vagrant.pub \

    -O /home/vagrant/.ssh/authorized_keys

chmod 0600 /home/vagrant/.ssh/authorized_keys

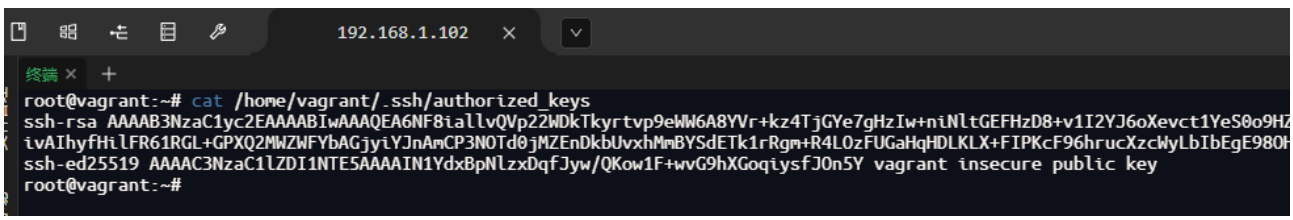
chown -R vagrant /home/vagrant/.ssh



查看/home/vagrant/.ssh/authorized_keys 文件是否有内容

如果没有内容请手动插入公钥

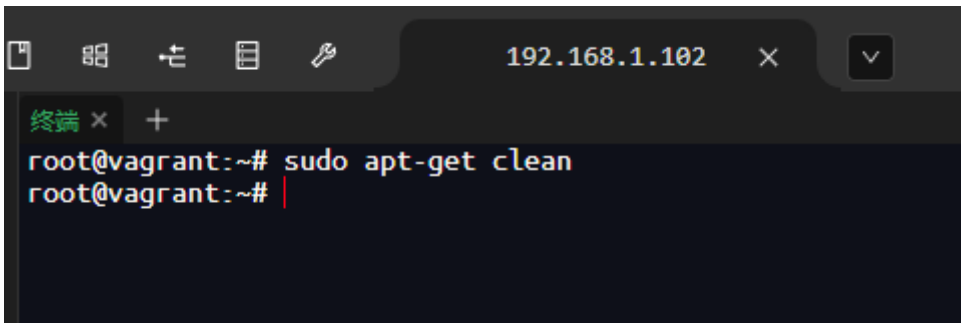
cat > /home/vagrant/.ssh/authorized_keys <<EOF
ssh-rsa
AAAAB3NzaC1yc2EAAAABIwAAAQEA6NF8iallvQVp22WDkTkyrtvp9eWW6A8YVr+kz4TjGYe7g
HzIw+niNltGEFHzD8+v1I2YJ6oXevct1YeS0o9HZyN1Q9qgCgzUFtdOKLv6IedplqoPkcmF0aYet2PkE
Do3MlTBckFXPITAMzF8dJSIFo9D8HfdOV0IAdx4O7PtixWKn5y2hMNG0zQPyUecp4pzC6kivAIhyf
HilFR61RGL+GPXQ2MWZWFYbAGjyiYJnAmCP3NOTd0jMZEnDkbUvxhMmBYSdETk1rRgm+R4
LOzFUGaHqHDLKLX+FIPKcF96hrucXzcWyLbIbEgE98OHlnVYCzRdK8jlqm8tehUc9c9WhQ==
vagrant insecure public key
ssh-ed25519
AAAAC3NzaC1lZDI1NTE5AAAAIN1YdxBpNlzxDqfJyw/QKow1F+wvG9hXGoqiysfJOn5Y vagrant
insecure public key
EOF



2.3.6 清理

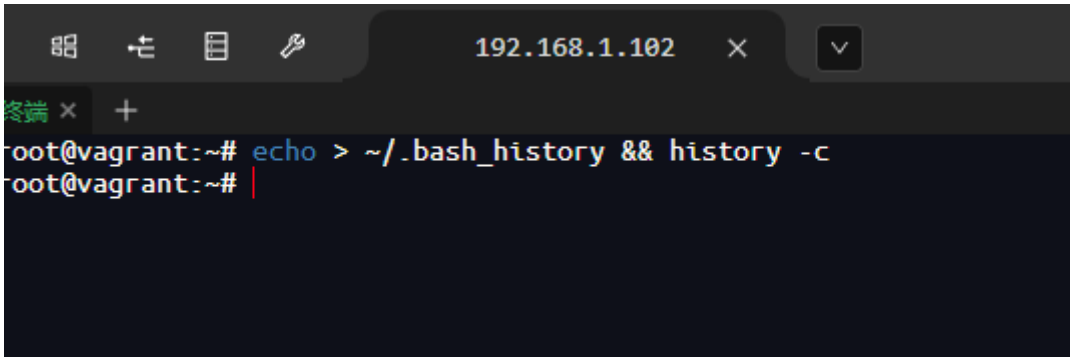
清理安装包

sudo apt-get autoclean

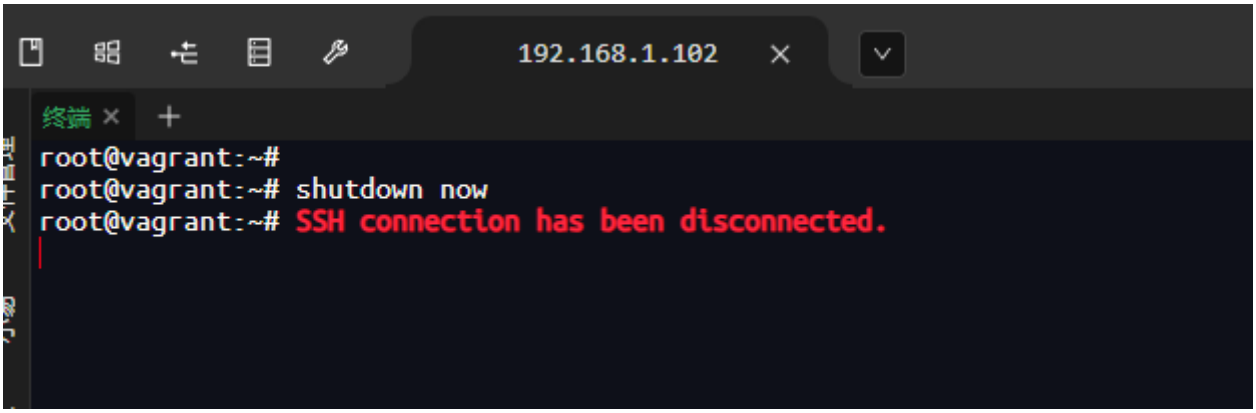


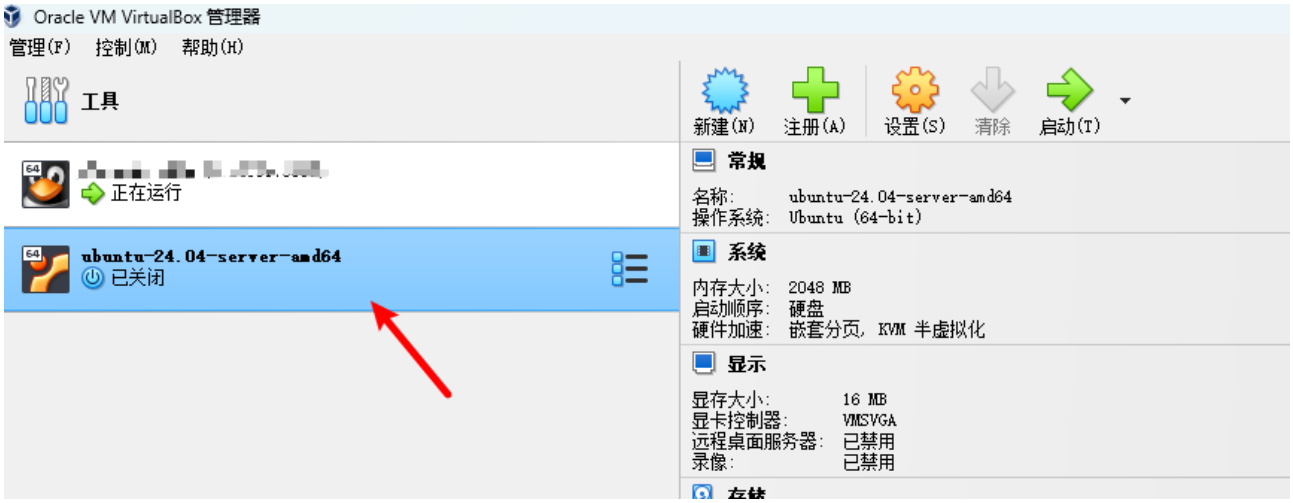
清除 Bash 历史

echo > ~/.bash_history && history -c



关机





3.1 制作 Vagrant Box 镜像

3.1.1 获取模板虚拟机名称

在任意文件夹下，打开命令行窗口（此处打开的是 git-bash）

查看当前 VirtualBox 虚拟机

VboxManage list vms

```
victor@DESKTOP-G8VC47I MINGW64 /e/SoftWorkspace/VagrantWorkspace/box
$ VBoxManage list vms
"iKuaiRouter" {b935a19a-5991-42a2-a330-f2cc5a4c07f6}
"ubuntu-24.04-server-amd64" {0522e228-654e-4bdf-840e-d4aafce03f7e}

victor@DESKTOP-G8VC47I MINGW64 /e/SoftWorkspace/VagrantWorkspace/box
$
```

复制模板虚拟机名称 `ubuntu-24.04-server-amd64`

3.1.2 制作 box

vagrant package \

--base "ubuntu-24.04-server-amd64" \

--output "E:/SoftWorkspace/VagrantWorkspace/box/mimiknight/ubuntu-24.04-server-amd64/1.1.1/ubuntu-24.04-server-amd64.box"

```
MINGW64:/e/SoftWorkspace/VagrantWorkspace/box
victor@DESKTOP-G8VC47I MINGW64 /e/SoftWorkspace/VagrantWorkspace/box
$ vagrant package \
 --base "ubuntu-24.04-server-amd64" \
 --output "E:/SoftWorkspace/VagrantWorkspace/box/mimiknight/ubuntu-24.04-server-amd64/1.1.1/ubuntu-24.04-server-amd64.box"
==> ubuntu-24.04-server-amd64: Creating new folder: E:/SoftWorkspace/VagrantWorkspace/box/mimiknight/ubuntu-24.04-server-amd64/1.1.1
==> ubuntu-24.04-server-amd64: Exporting VM...
==> ubuntu-24.04-server-amd64: Compressing package to: E:/SoftWorkspace/VagrantWorkspace/box/mimiknight/ubuntu-24.04-server-amd64/1.1.1/ubuntu-24.04-server-amd64.box
```

box 命名规范：

{box_path}/{group}/{box_name}/{box_version}/{box_name}.box

box_path: E:/SoftWorkspace/VagrantWorkspace/box

group: mimiknight

box_name: mimiknight

box_version:1.1.1

查看路径下 box 是否生成成功

3.1.3 载入 box 并设置 box 版本

生成 box 配置文件 metadata.json

```
cat > E:/SoftWorkspace/VagrantWorkspace/box/mimiknight/ubuntu-24.04-server-amd64/1.1.1/metadata.json <<EOF
{
    "name": "mimiknight/ubuntu-24.04-server-amd64",
    "versions":
    [
        {
            "version": "1.1.1",
            "providers": [
                {
                  "name": "virtualbox",
                    "url": "E:/SoftWorkspace/VagrantWorkspace/box/mimiknight/ubuntu-24.04-server-amd64/1.1.1/ubuntu-24.04-server-amd64.box"
                }
            ]
        }
    ]
}
EOF
```

```
victor@DESKTOP-G8VC47I MINGW64 /e/SoftWorkspace/VagrantWorkspace/box
$ cat > E:/SoftWorkspace/VagrantWorkspace/box/mimiknight/ubuntu-24.04-server-amd64/1.1.1/metadata.json <<EOF
{
    "name": "mimiknight/ubuntu-24.04-server-amd64",
    "versions":
    [
        {
            "version": "1.1.1",
            "providers": [
                {
                  "name": "virtualbox",
                  "url": "E:/SoftWorkspace/VagrantWorkspace/box/mimiknight/ubuntu-24.04-server-amd64/1.1.1/ubuntu-24.04-server-amd64.box"
                }
            ]
        }
    ]
}
EOF

victor@DESKTOP-G8VC47I MINGW64 /e/SoftWorkspace/VagrantWorkspace/box
$
```

载入 box

vagrant box add E:/SoftWorkspace/VagrantWorkspace/box/mimiknight/ubuntu-24.04-server-amd64/1.1.1/metadata.json

```
victor@DESKTOP-G8VC47I MINGW64 /e/SoftWorkspace/VagrantWorkspace/box
$ vagrant box add E:/SoftWorkspace/VagrantWorkspace/box/mimiknight/ubuntu-24.04-server-amd64/1.1.1/metadata.json
==> box: Loading metadata for box 'E:/SoftWorkspace/VagrantWorkspace/box/mimiknight/ubuntu-24.04-server-amd64/1.1.1/metadata.json'
    box: URL: file:///E:/SoftWorkspace/VagrantWorkspace/box/mimiknight/ubuntu-24.04-server-amd64/1.1.1/metadata.json
==> box: Adding box 'mimiknight/ubuntu-24.04-server-amd64' (v1.1.1) for provider: virtualbox
    box: Downloading: E:/SoftWorkspace/VagrantWorkspace/box/mimiknight/ubuntu-24.04-server-amd64/1.1.1/ubuntu-24.04-server-amd64.box
    box:
==> box: Successfully added box 'mimiknight/ubuntu-24.04-server-amd64' (v1.1.1) for 'virtualbox'!

victor@DESKTOP-G8VC47I MINGW64 /e/SoftWorkspace/VagrantWorkspace/box
$
```

查看 box

```
MINGW64:/e/SoftWorkspace/VagrantWorkspace/box

victor@DESKTOP-G8VC47I MINGW64 /e/SoftWorkspace/VagrantWorkspace/box
$ vagrant box list
mimiknight/ubuntu-24.04-server-amd64 (virtualbox, 1.1.1)

victor@DESKTOP-G8VC47I MINGW64 /e/SoftWorkspace/VagrantWorkspace/box
$
```

指定版本的 box 载入成功

3.2 根据 box 创建虚拟机

3.2.1 创建 mysql 虚拟机

创建 vagrant 虚拟机工作空间

mkdir E:\SoftWorkspace\VagrantWorkspace\vms

进入 vagrant 虚拟机工作空间

cd E:\SoftWorkspace\VagrantWorkspace\vms

创建并进入 mysql 虚拟机目录

mkdir dev-mysql

cd dev-mysql

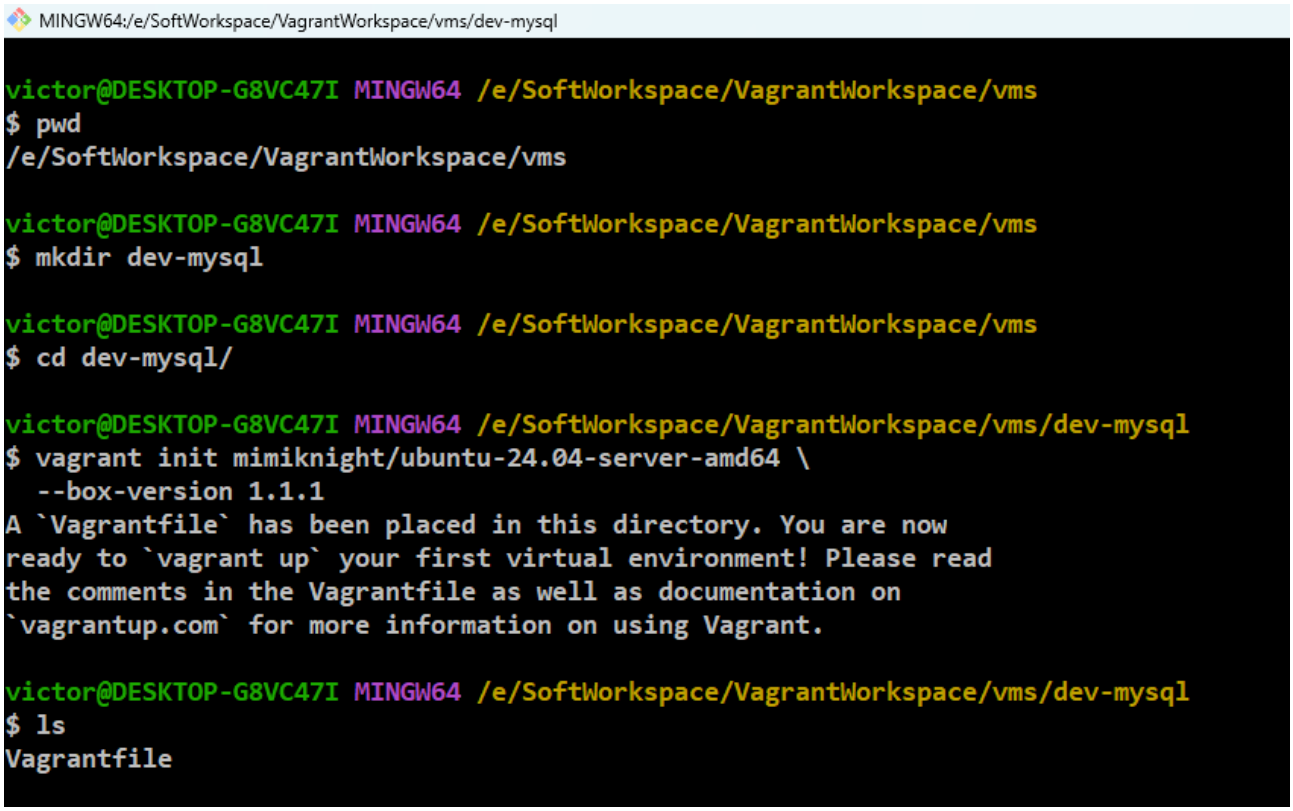
初始化

vagrant init mimiknight/ubuntu-24.04-server-amd64 \

  --box-version 1.1.1

启动虚拟机

vagrant up



配置 vagrantfile

```
cat > Vagrantfile <<EOF
# -*- mode: ruby -*-
# vi: set ft=ruby :
Vagrant.configure("2") do |config|
  # box 镜像
  config.vm.box = "mimiknight/ubuntu-24.04-server-amd64"
  # box 版本
  config.vm.box_version = "1.1.1"
```

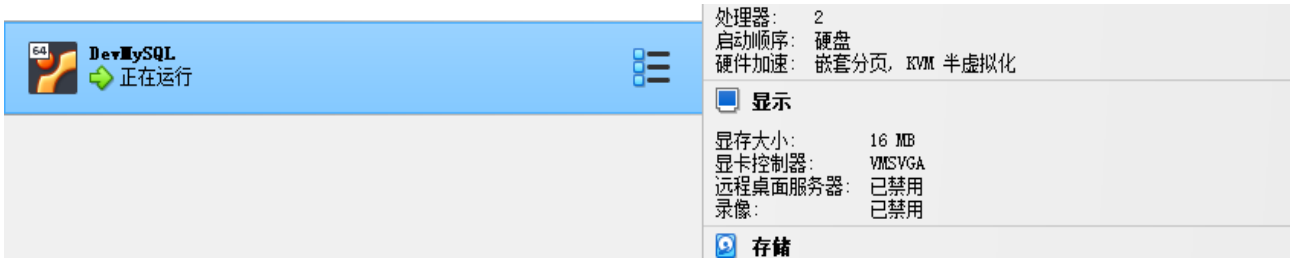
```
  # 主机名
  config.vm.hostname = "mysql.dev.vm.mimiknight.cn"
  # config.vm.box_check_update = false
  # config.vm.network "forwarded_port", guest: 80, host: 8080
  # config.vm.network "forwarded_port", guest: 80, host: 8080, host_ip: "127.0.0.1"
  # config.vm.network "private_network", ip: "192.168.33.10",netmask: "24"
  # config.vm.network "public_network"
  # config.vm.synced_folder "../data", "/vagrant_data"
  # config.vm.synced_folder ".", "/vagrant", disabled: true
  config.vm.provider "virtualbox" do |vb|
    # 虚拟机名称
    vb.name = "DevMySQL"
    # Display the VirtualBox GUI when booting the machine
    vb.gui = false
    # Customize the amount of memory on the VM:
    vb.memory = "2048"
    # cpu
    vb.cpus = 2
  end
  # config.vm.provision "shell", inline: <<-SHELL
  #   apt-get update
  #   apt-get install -y apache2
  # SHELL
end
EOF

# 启动虚拟机
vagrant up
```

```
MINGW64:/e/SoftWorkspace/VagrantWorkspace/vms/dev-mysql

victor@DESKTOP-G8VC47I MINGW64 /e/SoftWorkspace/VagrantWorkspace/vms/dev-mysql
$ vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Importing base box 'mimiknight/ubuntu-24.04-server-amd64'...
==> default: Matching MAC address for NAT networking...
==> default: Checking if box 'mimiknight/ubuntu-24.04-server-amd64' version '1.1.1' is up to date...
==> default: Setting the name of the VM: DevMySQL
==> default: Clearing any previously set network interfaces...
==> default: Preparing network interfaces based on configuration...
    default: Adapter 1: nat
==> default: Forwarding ports...
    default: 22 (guest) => 2222 (host) (adapter 1)
==> default: Running 'pre-boot' VM customizations...
==> default: Booting VM...
==> default: Waiting for machine to boot. This may take a few minutes...
    default: SSH address: 127.0.0.1:2222
    default: SSH username: vagrant
    default: SSH auth method: private key
    default:
    default: Vagrant insecure key detected. Vagrant will automatically replace
    default: this with a newly generated keypair for better security.
    default:
    default: Inserting generated public key within guest...
    default: Removing insecure key from the guest if it's present...
    default: Key inserted! Disconnecting and reconnecting using new SSH key...
==> default: Machine booted and ready!
==> default: Checking for guest additions in VM...
==> default: Setting hostname...
==> default: Mounting shared folders...
    default: /vagrant => E:/SoftWorkspace/VagrantWorkspace/vms/dev-mysql

victor@DESKTOP-G8VC47I MINGW64 /e/SoftWorkspace/VagrantWorkspace/vms/dev-mysql
$
```



part 2 制作 centos7 box