

openEuler 社区开源实习

基础操作指导手册

V1.0

修订记录	修订内容	修改人	修改时间
V1.0	初稿	bolin-lee	2021.09.09

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1 环境准备

1.1 简介

本手册为 openEuler 社区开源实习测试任务（安装 openEuler 与提交 PR）操作指导。

1.2 实验环境说明

实习环境建议操作系统为 openEuler，具体硬件平台不做要求，服务器、个人 PC、虚拟机、华为云、树莓派均可。本操作手册以 PC 上安装 openEuler 虚拟机为例。

1.2.1 个人电脑及操作系统

最小配置：

表1-1 实验设备

设备名称	设备型号	操作系统
个人电脑	处理器：Intel i5 CPU 逻辑处理器数： ≥ 4 内存：8G 系统类型：x64-based处理器	Windows 10 / macOS

注：具体以个人 PC 配置为准，只要满足工作要求均可。

1.2.2 虚拟机软件

表1-2 虚拟机软件

软件名称及本实验推荐版本	官方网址	备注
VMware Workstation 15.5 Pro	https://www.vmware.com/	需付费使用
Oracle VM VirtualBox 6.1	http://www.virtualbox.org	根据其相关协议使用



注：本指导所用虚拟机软件是 Oracle VM VirtualBox 6.1。

1.2.3 openEuler 操作系统镜像

openEuler 操作系统镜像可以从 openEuler 官网下载，推荐使用 openEuler 20.03 LTS SP2 或 openEuler 21.09。本指导借用旧文档相关截图，故以 20.09 安装为例(安装步骤一致)。

CPU 架构根据自己硬件平台架构选择，目前绝大多数笔记本为 X86 架构，苹果 M1 为 ARM64 架构但不支持虚拟化。

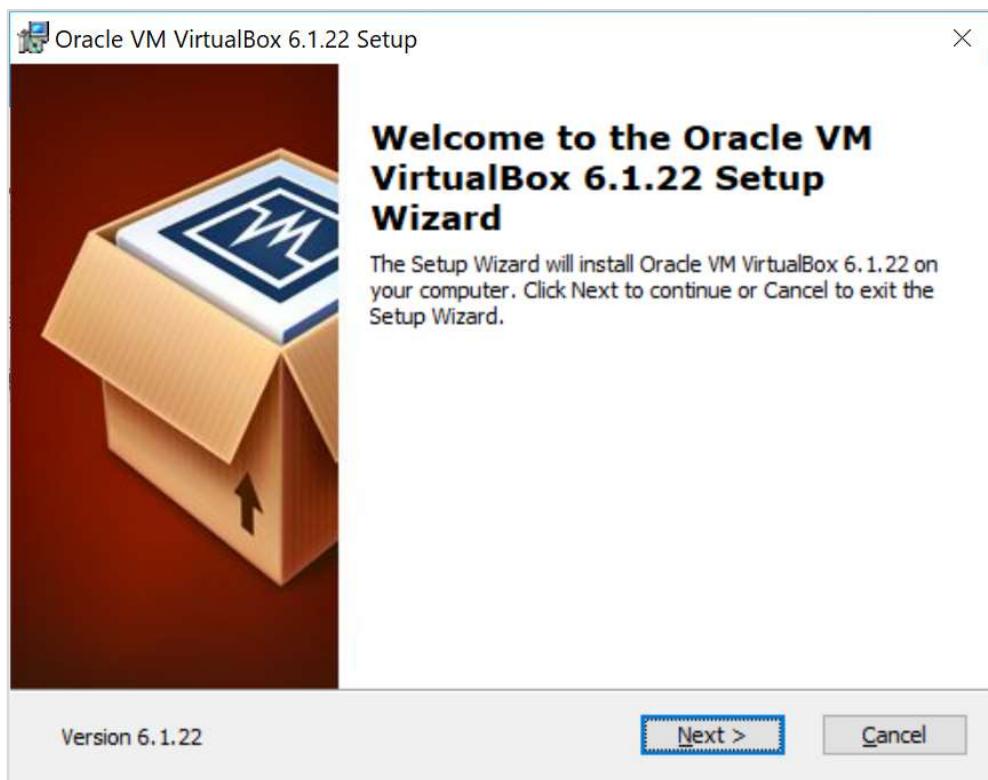
表1-3 openEuler 操作系统镜像

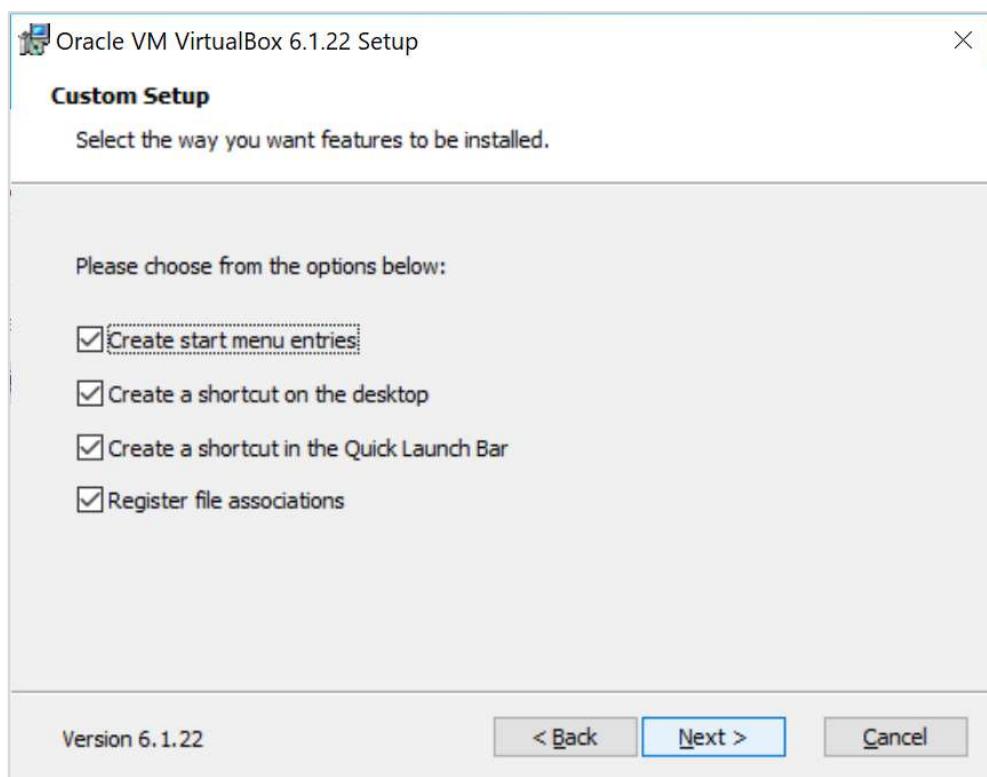
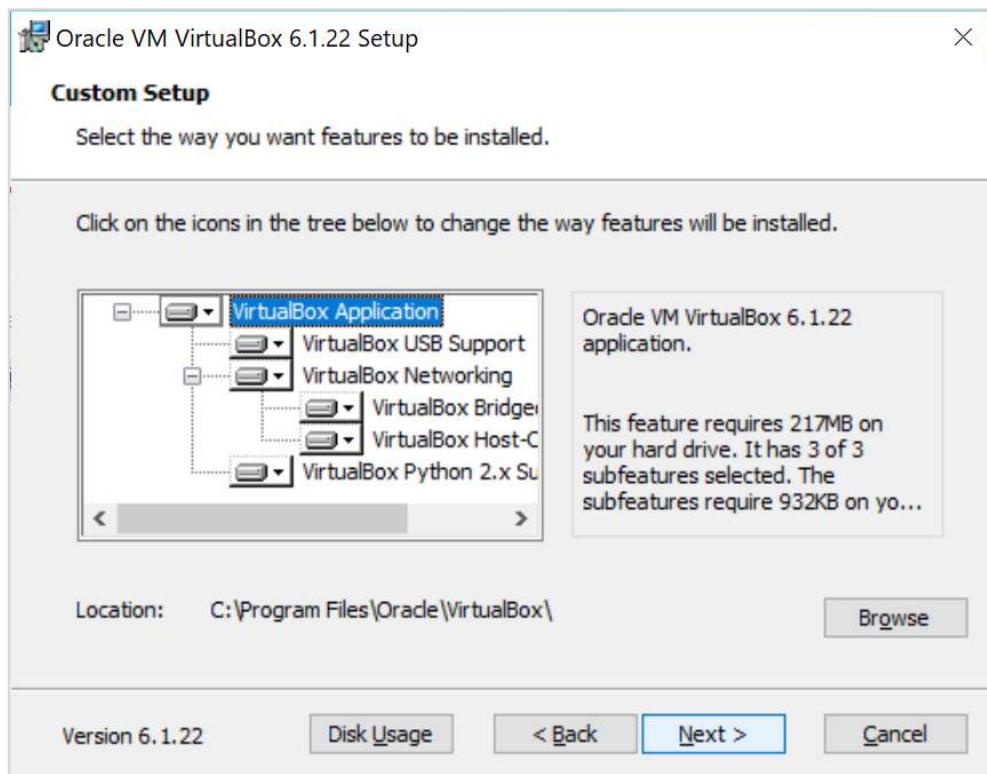
软件名称	CPU 架构	下载地址
openEuler 21.09	x86_64	https://repo.openeuler.org/openEuler-21.09/ISO/x86_64/openEuler-21.09-x86_64-dvd.iso

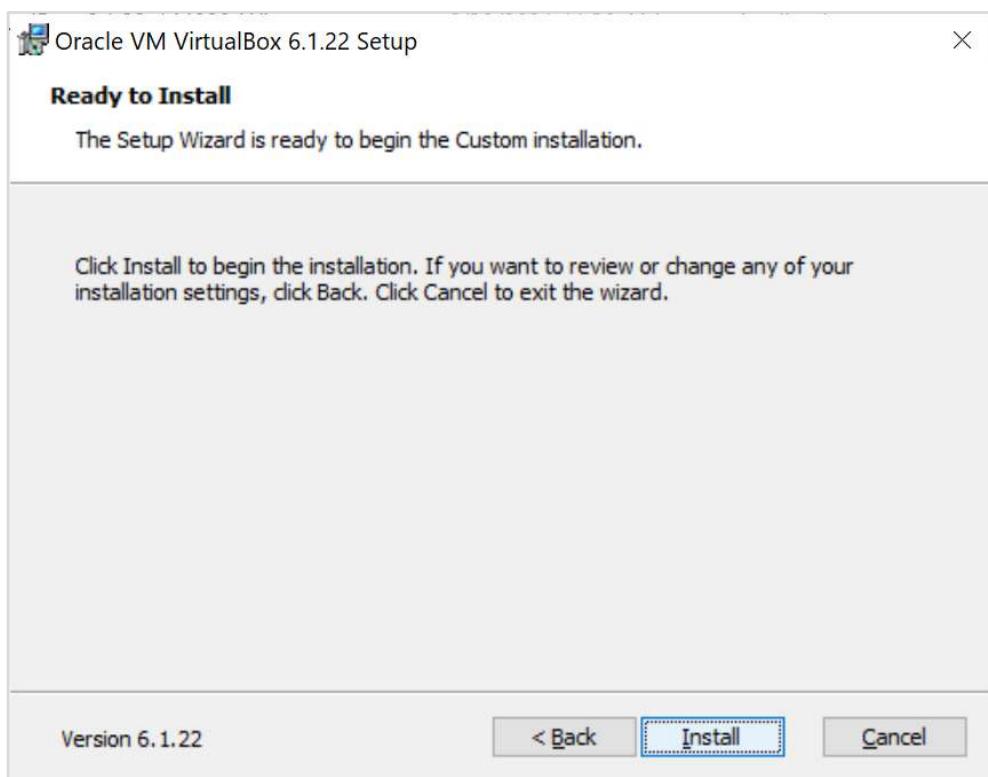
2 虚拟机安装

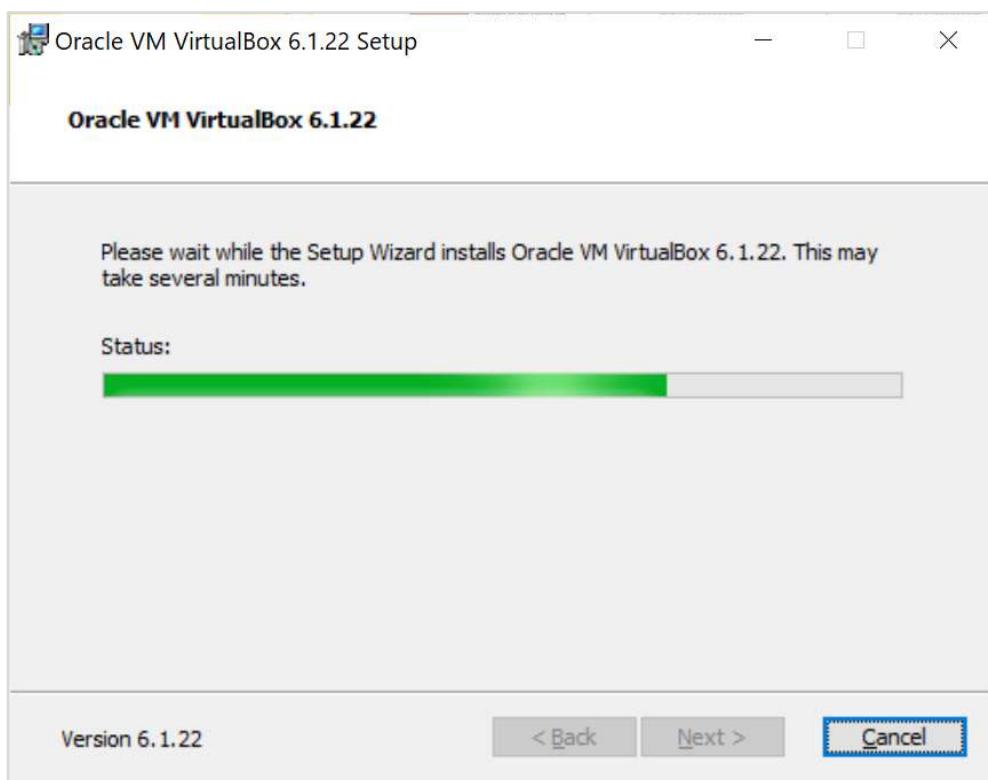
2.1 安装虚拟机软件

本节以安装 Oracle VM VirtualBox 6.1 软件为例，安装该虚拟机软件时一路默认安装即可：

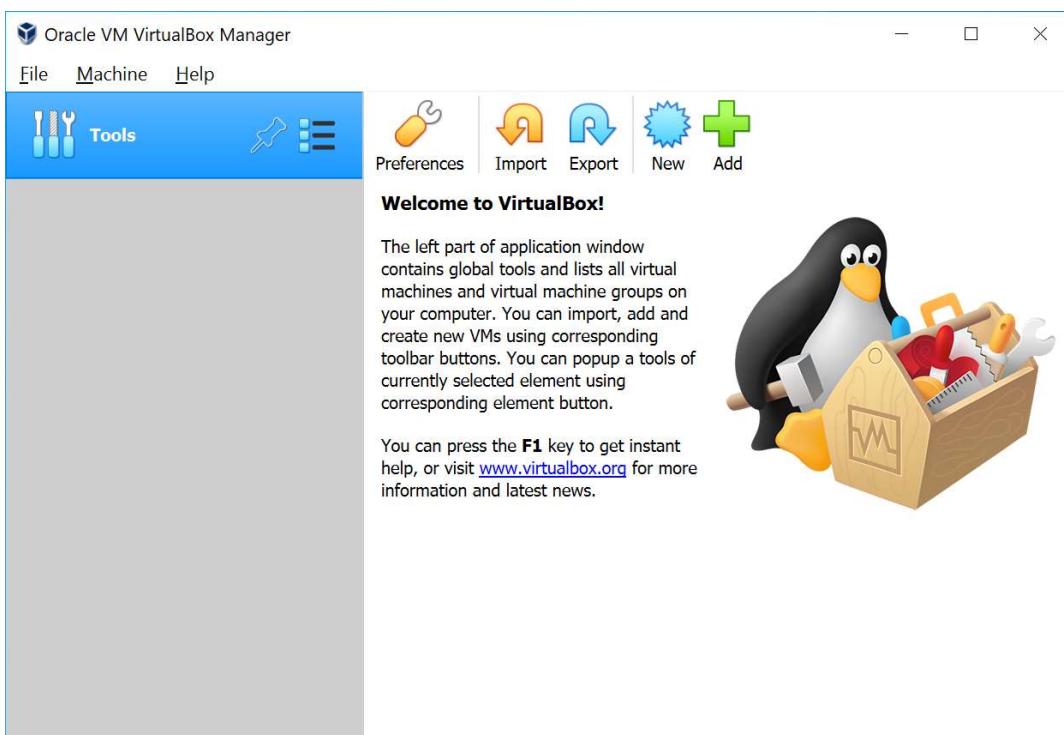






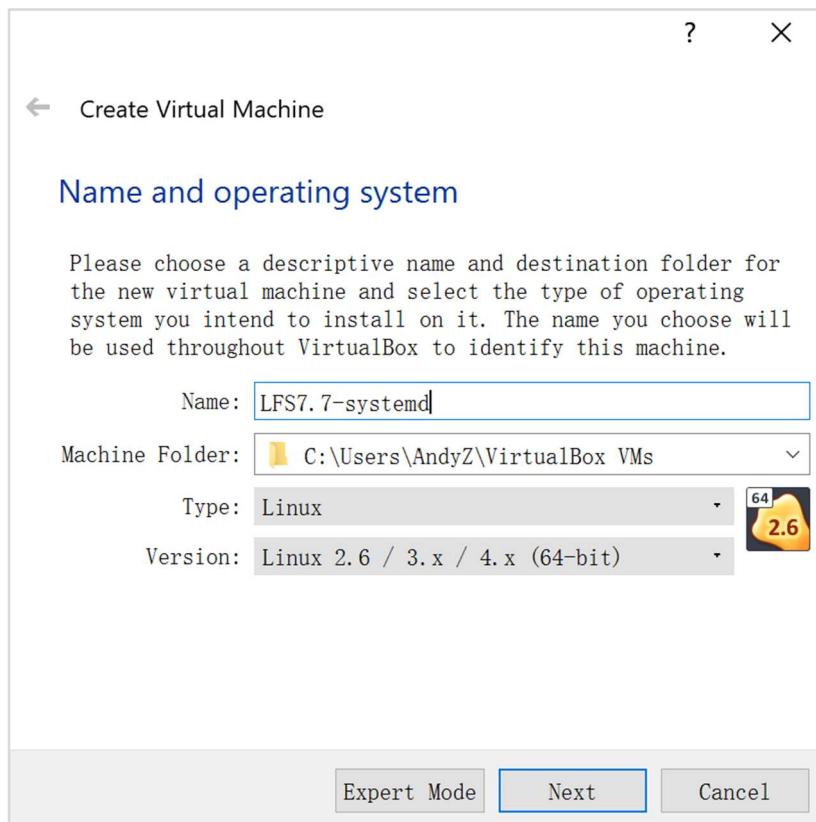


这是虚拟机软件启动之后的界面：

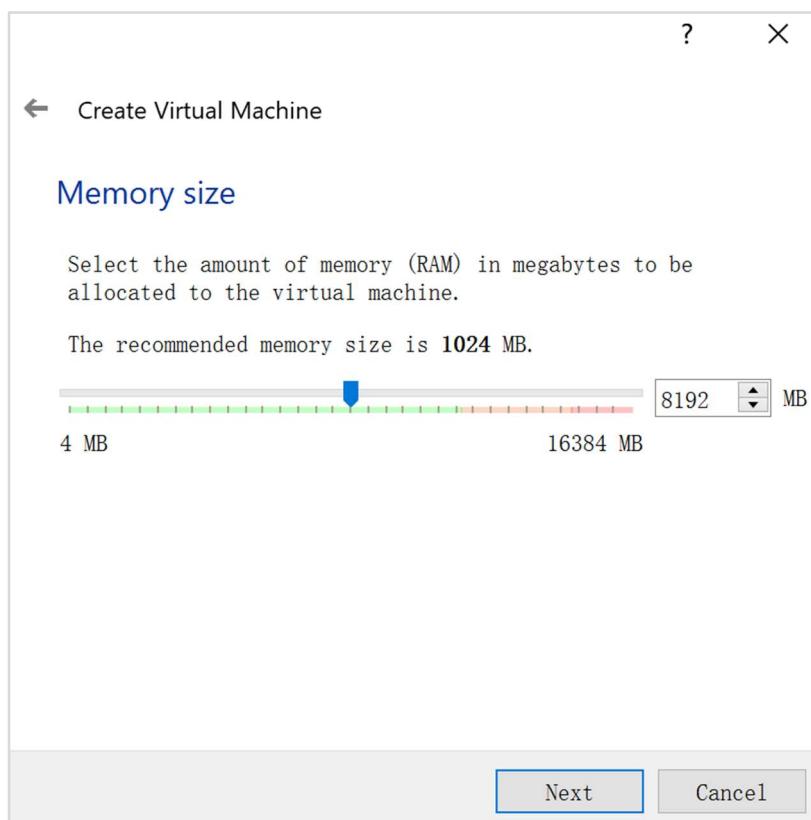


2.1.1 创建虚拟机

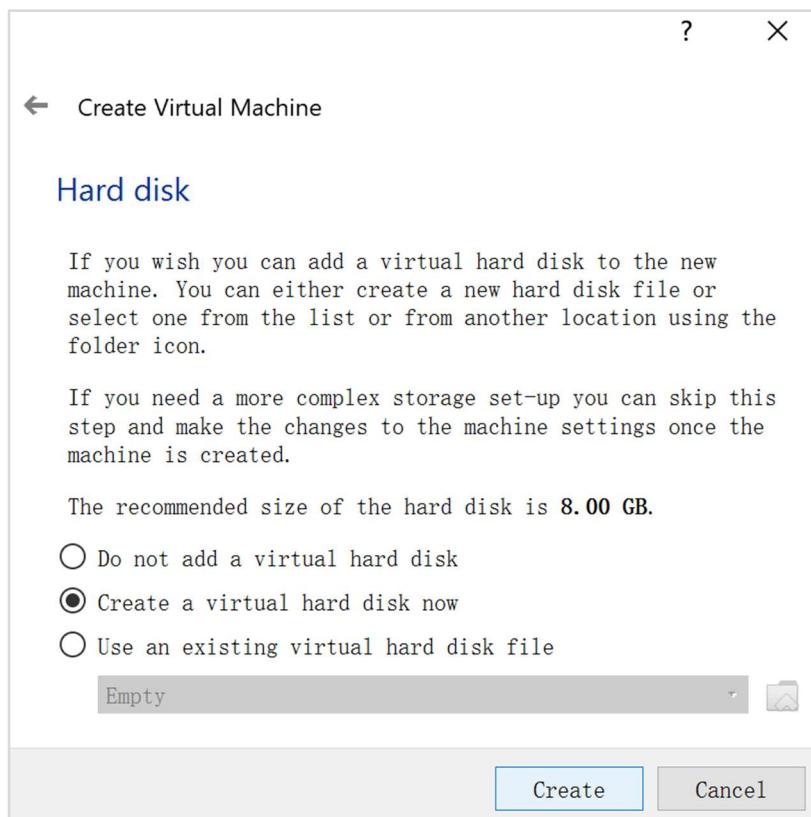
创建虚拟机时，请选择 Linux 类型和 64-bit 版本，20.09 内核版本是 4.19；如果选择安装 21.03（内核版本为 5.10），请选择 Other Linux (64-bit)



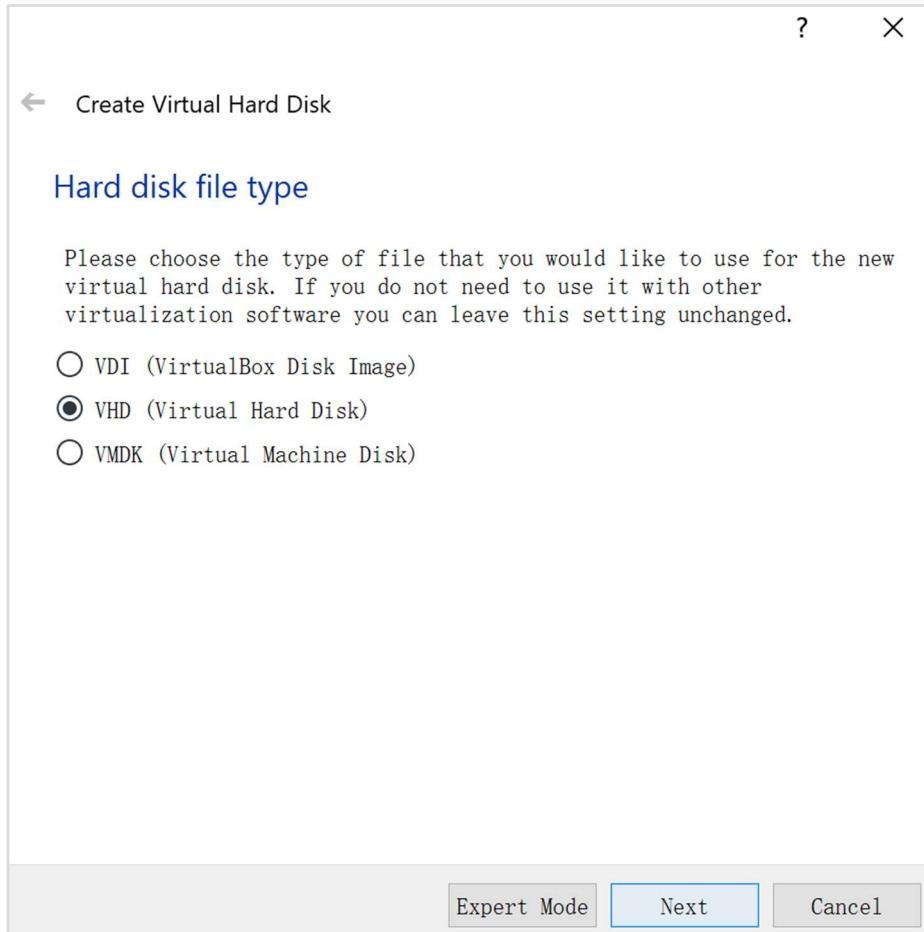
为了在构建 LFS 系统时有较快的速度，内存设置为 8GB（或以上）：



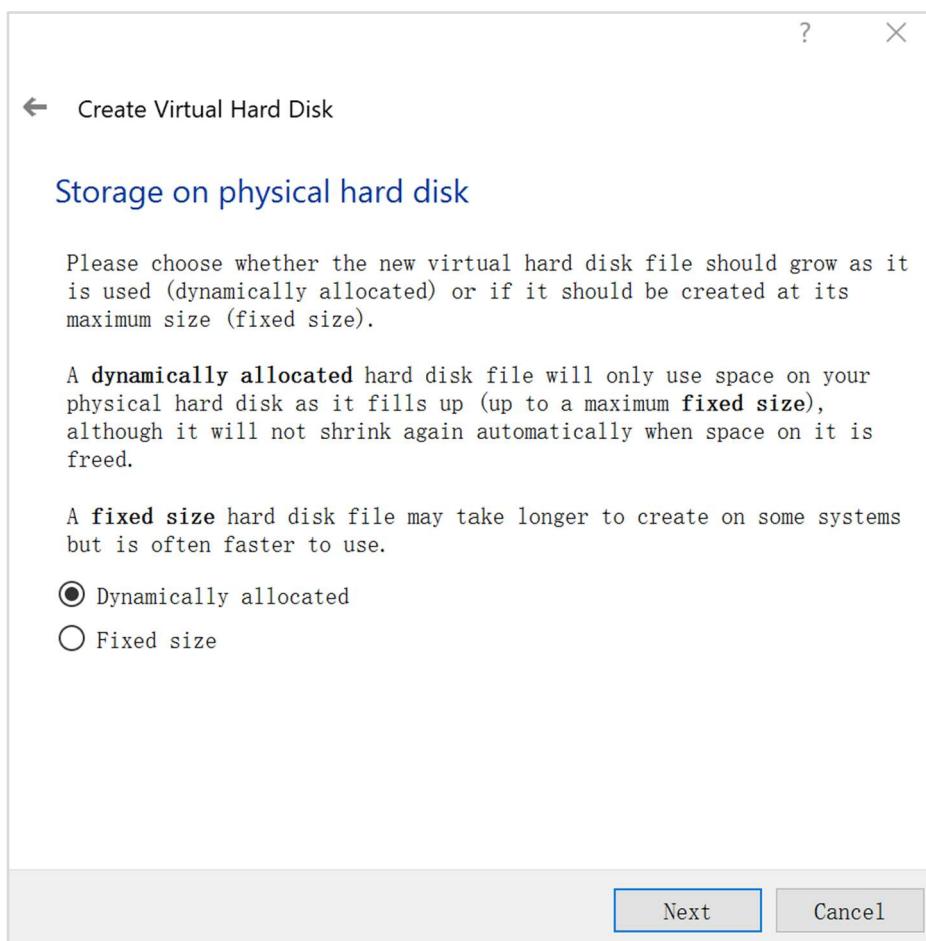
现在就创建硬盘：



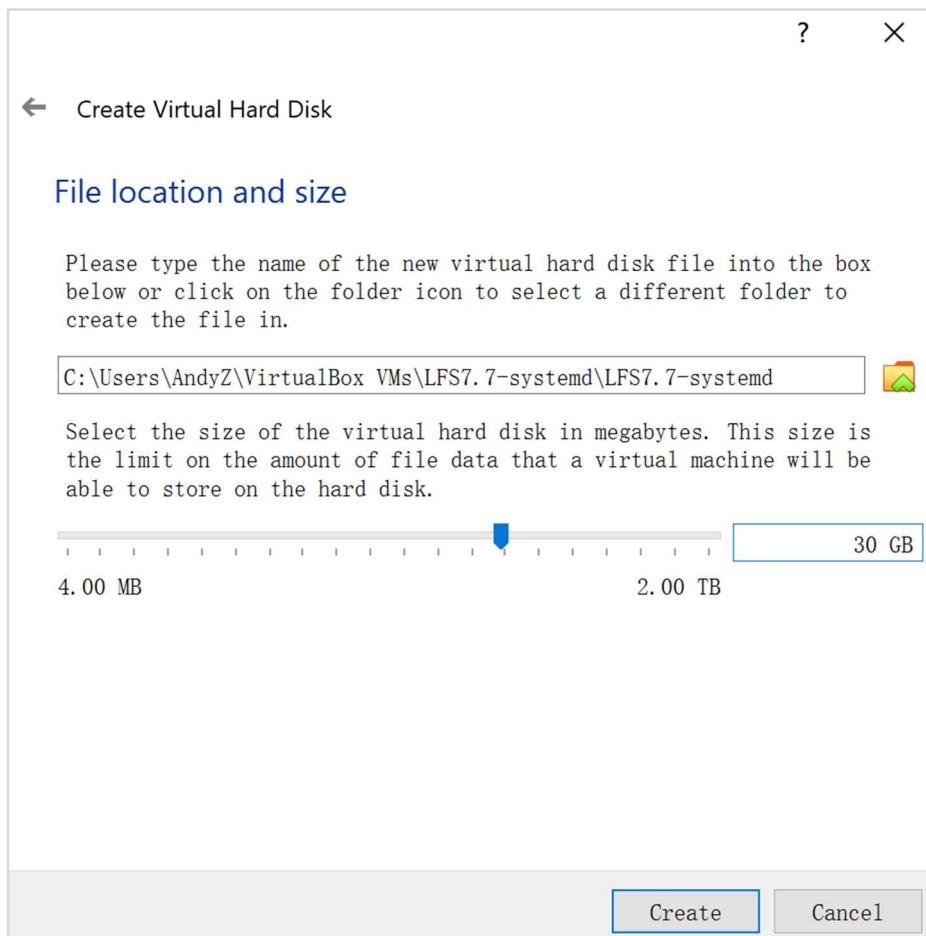
这里硬盘类型为 VHD：



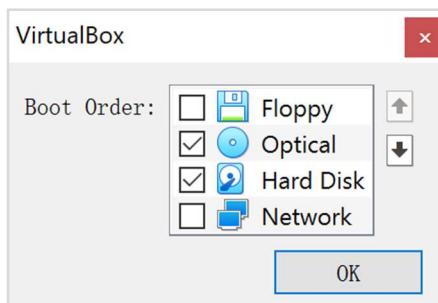
磁盘容量“动态增长”：



为保证足够的空间，为宿主机配置 30GB 大小的容量：

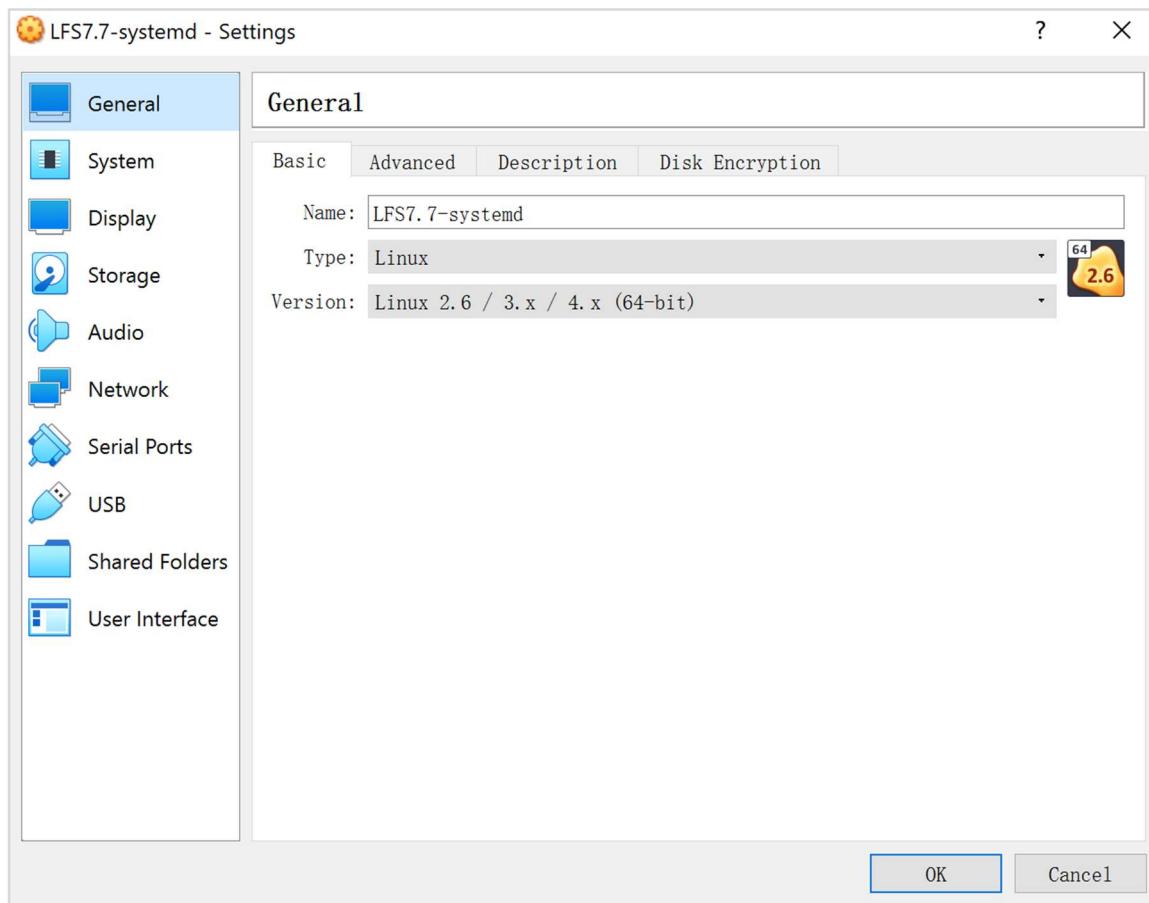


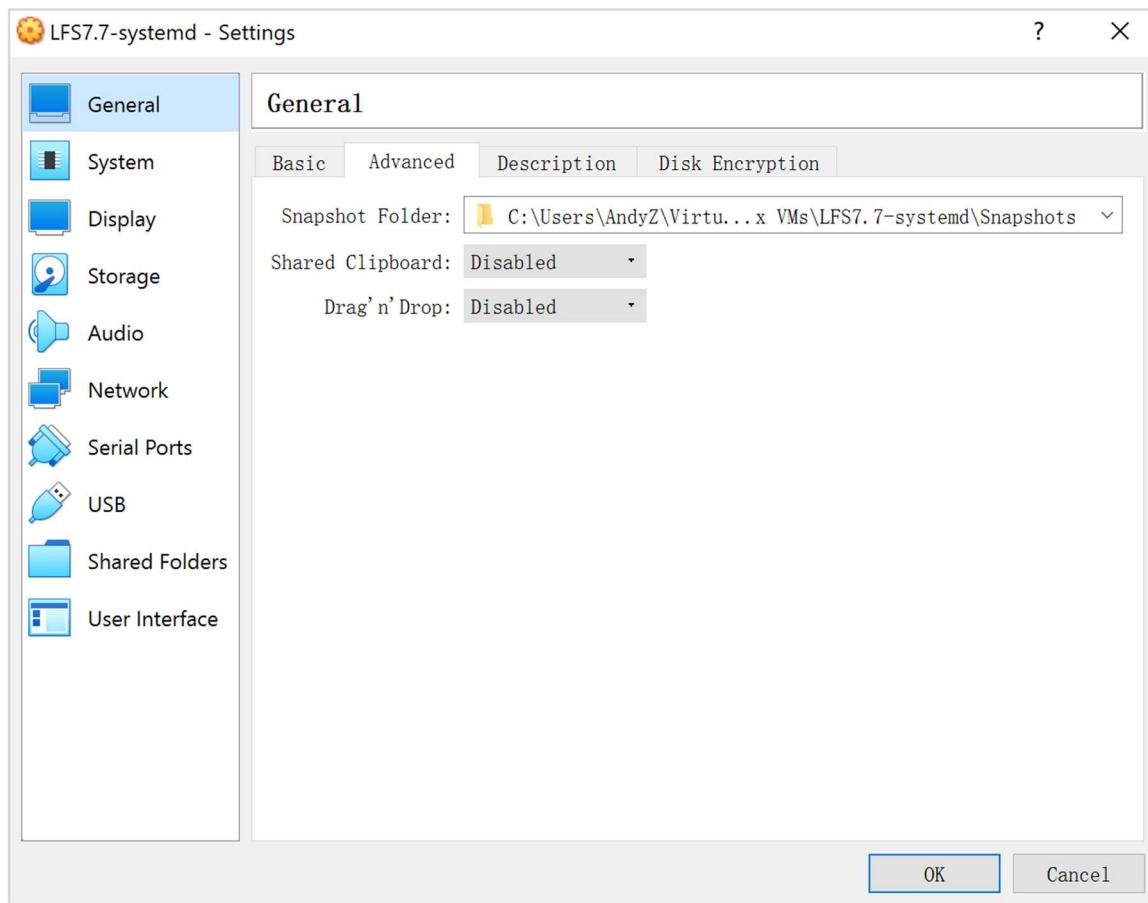
仅保留从光驱和硬盘启动：

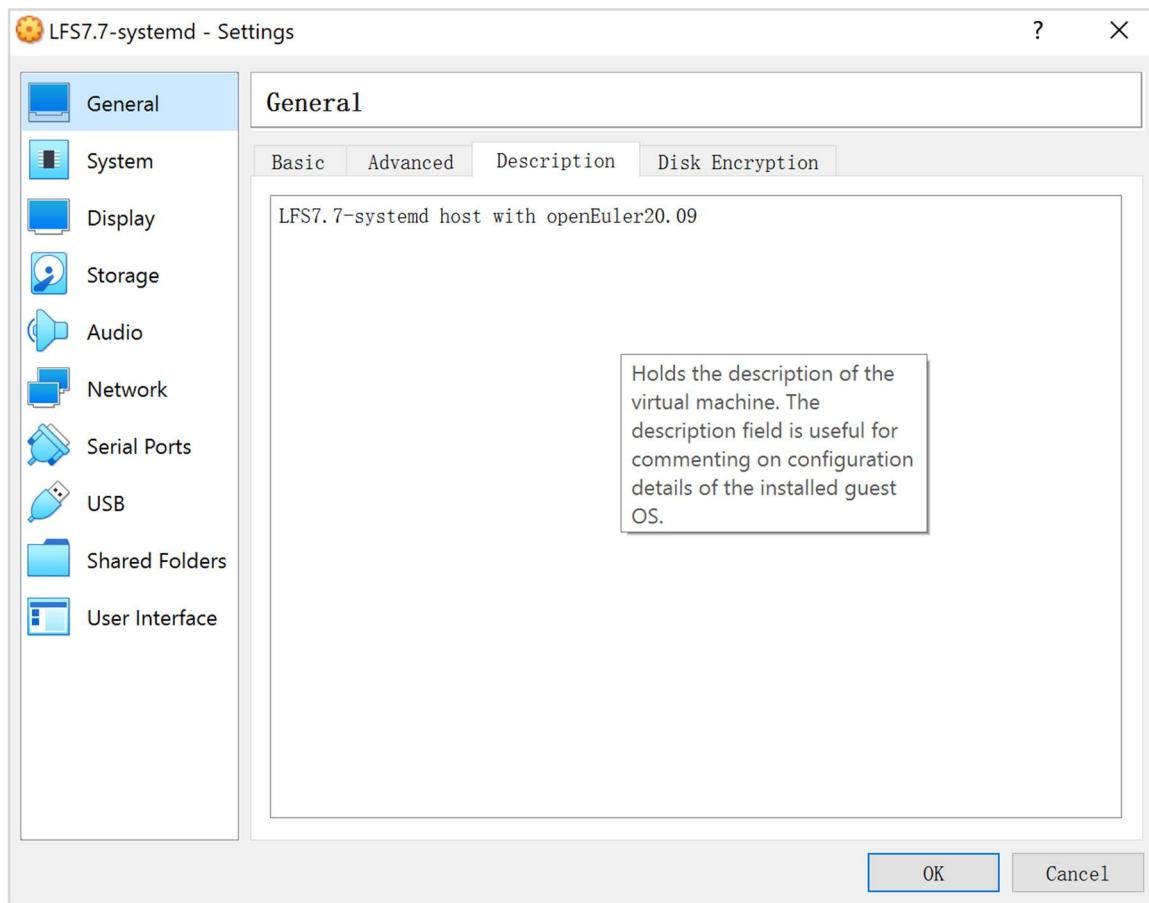


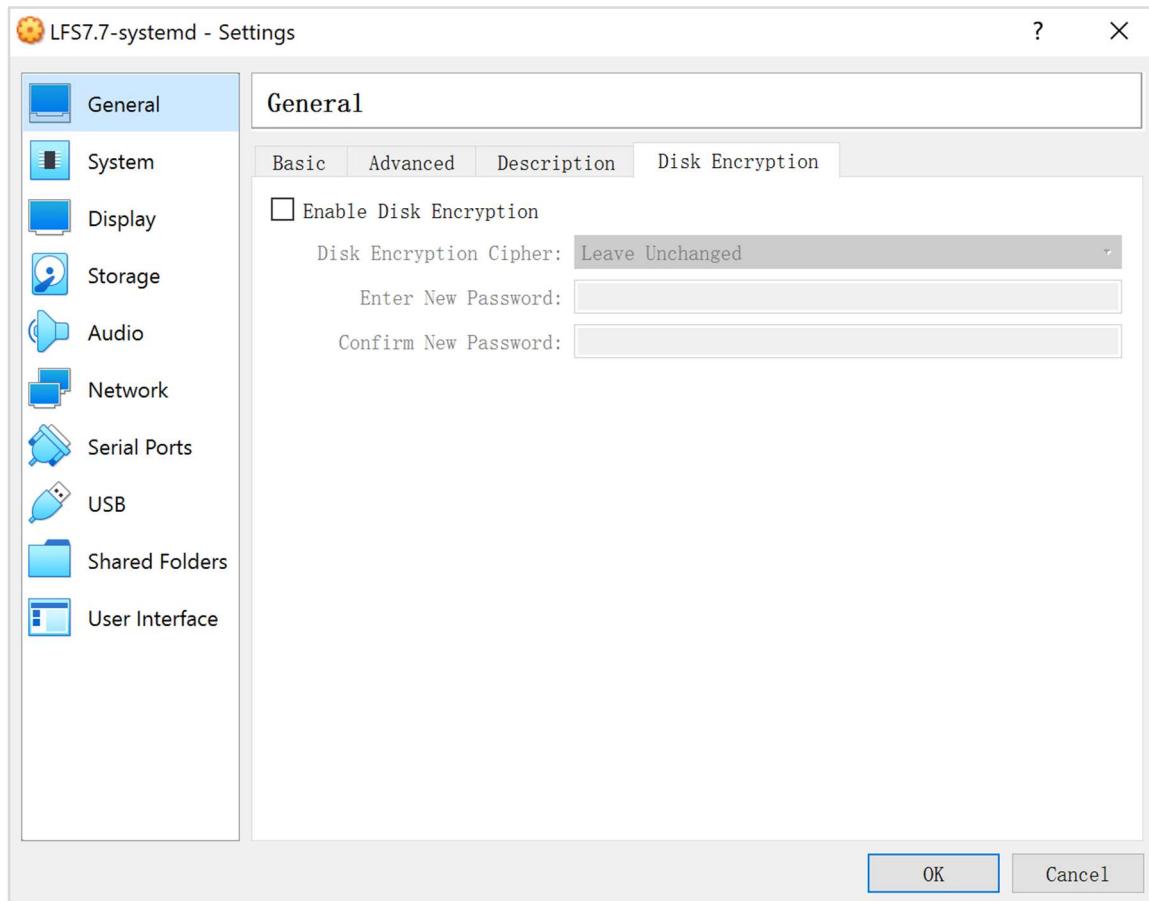
2.1.2 对虚拟机的部分配置进行调整

基本信息概览：

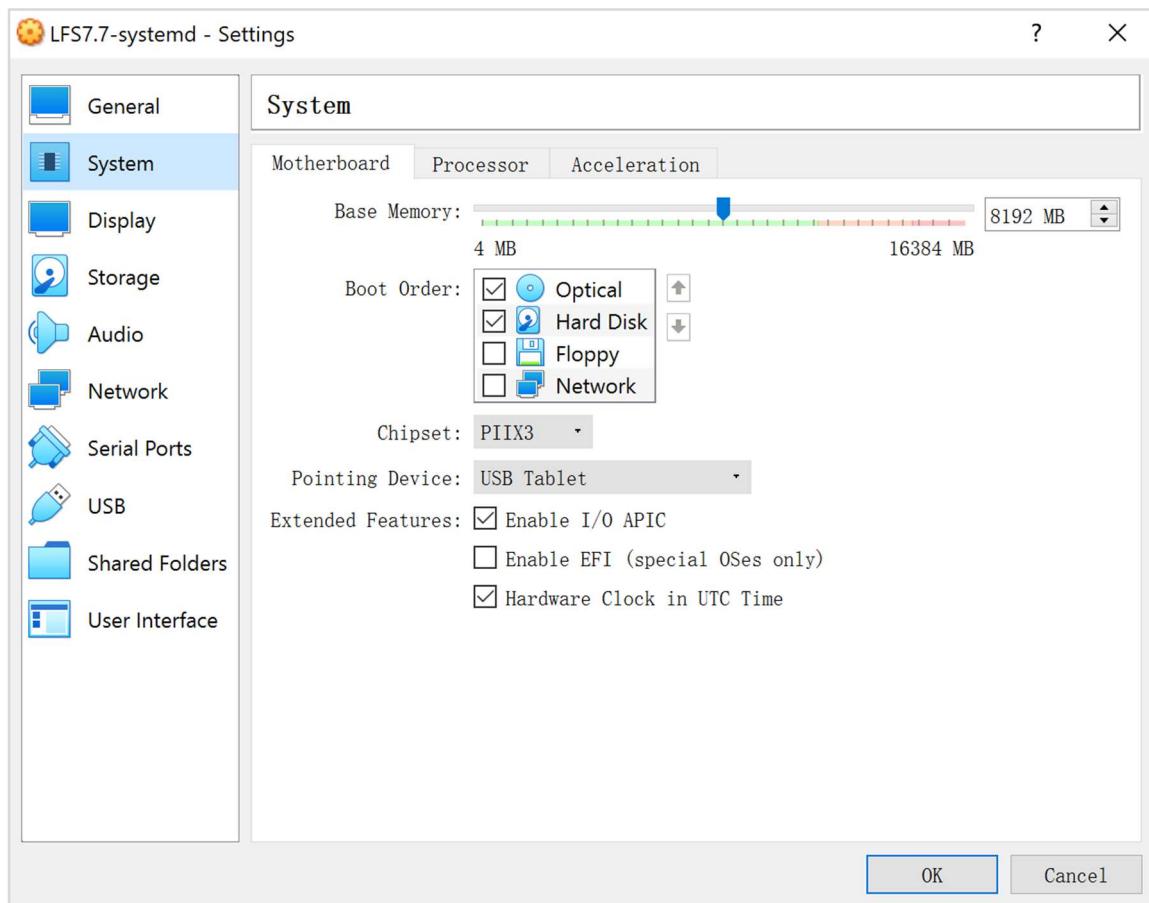


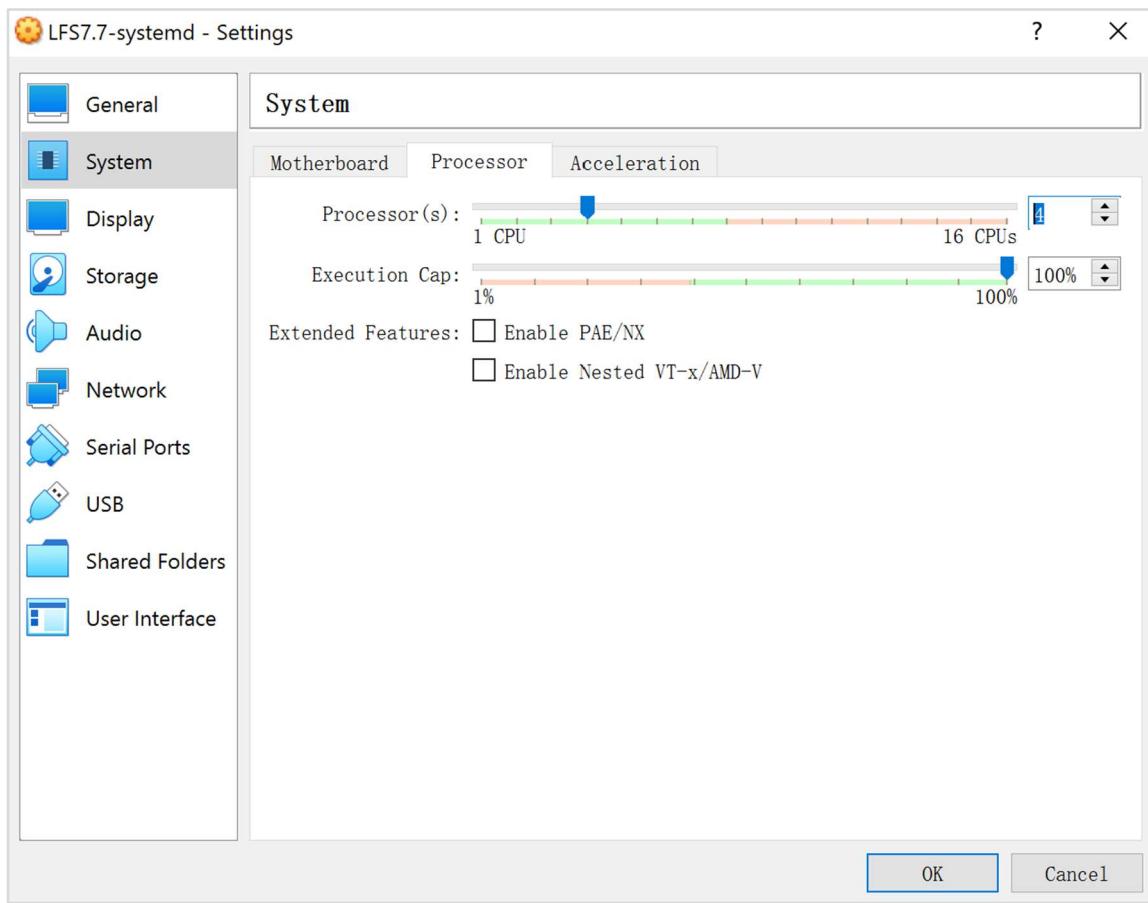


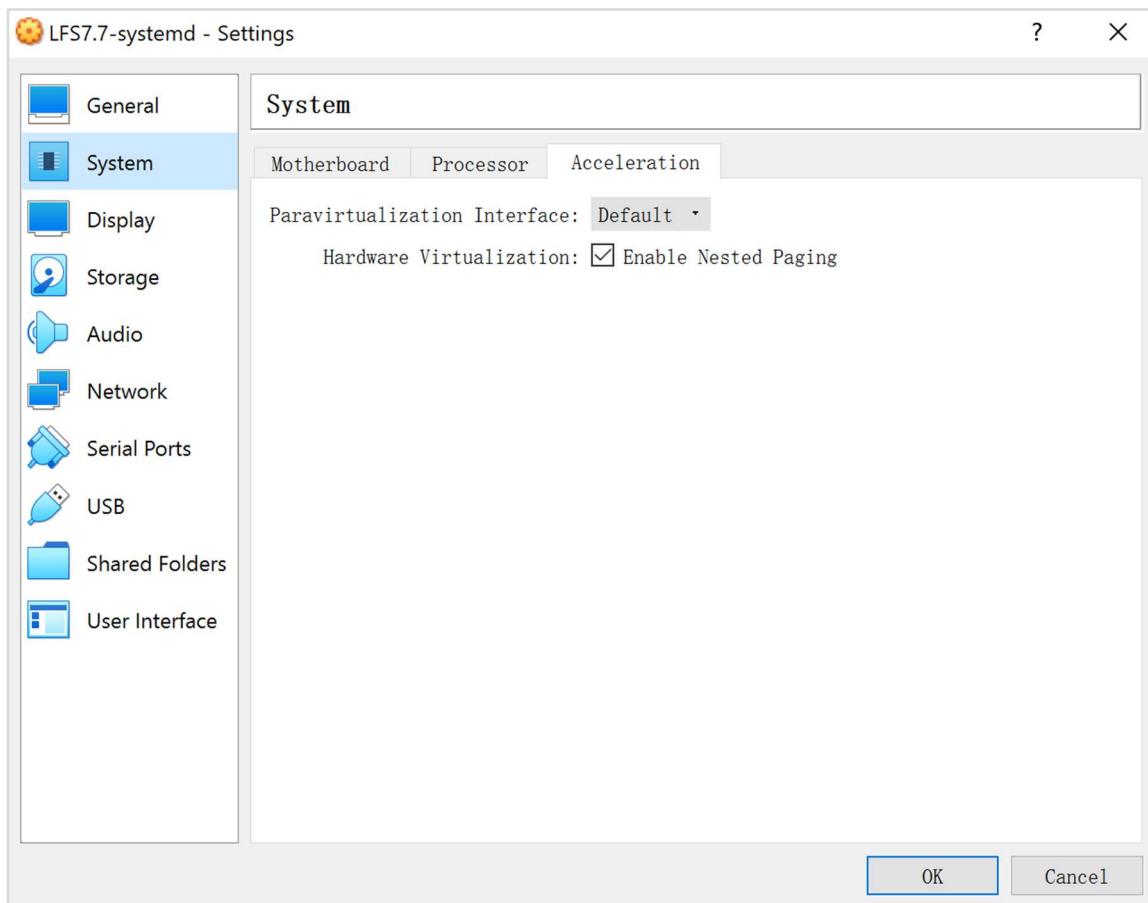




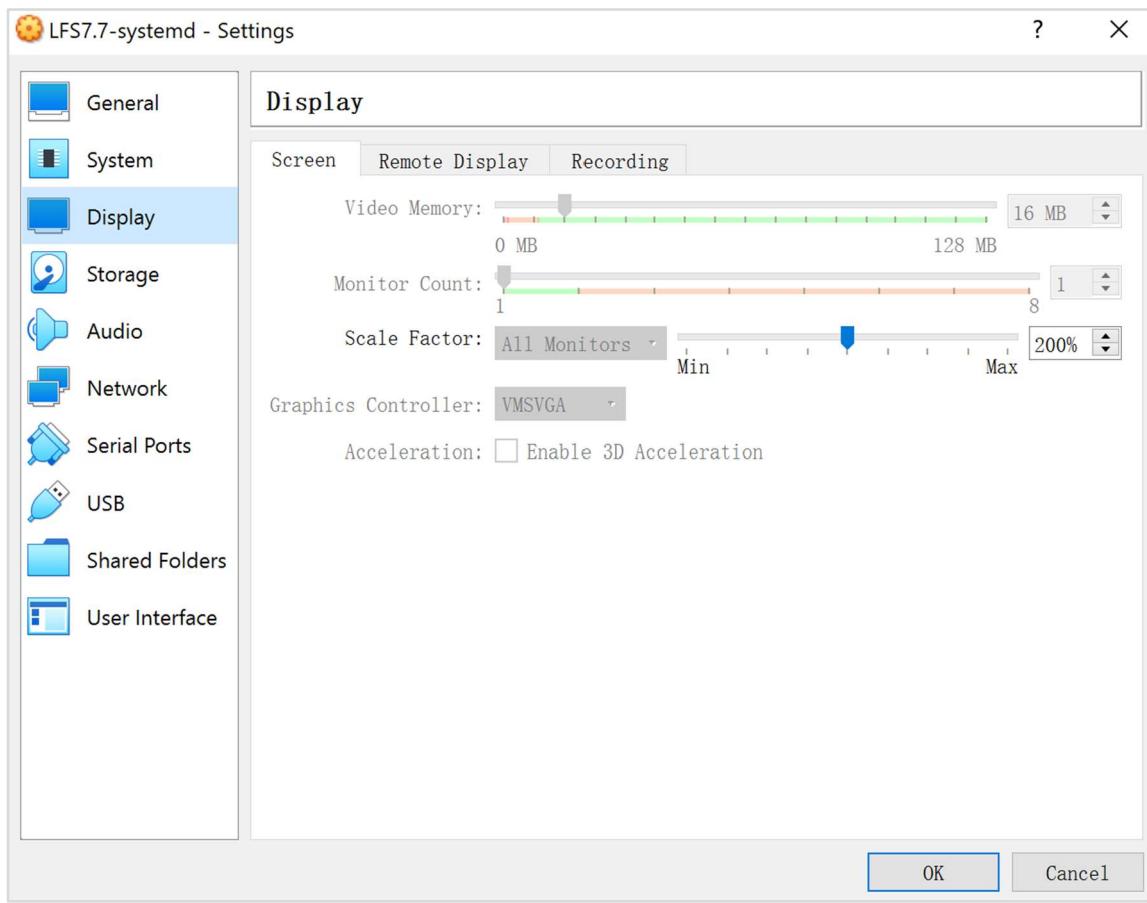
系统信息概览（注意将 CPU 至少设置成 4 核以提高构建系统的速度）：



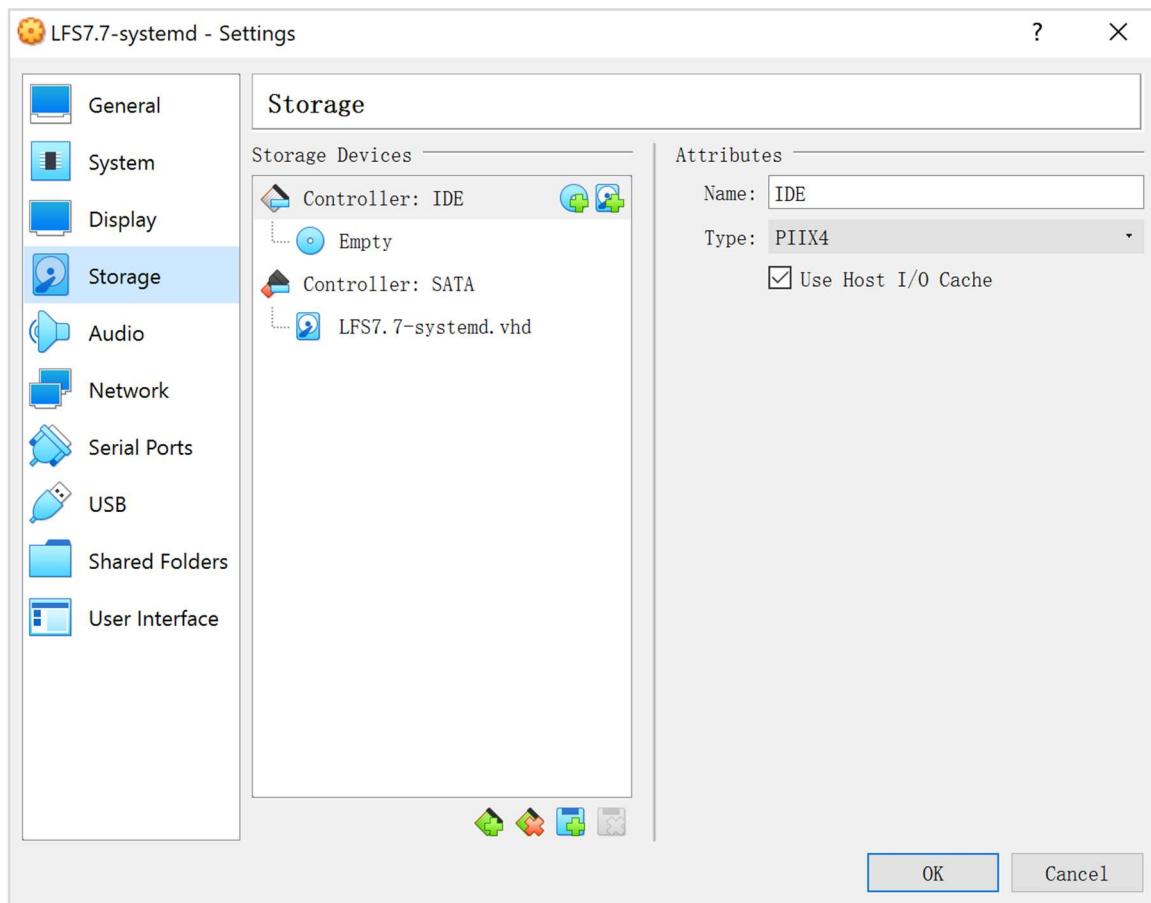




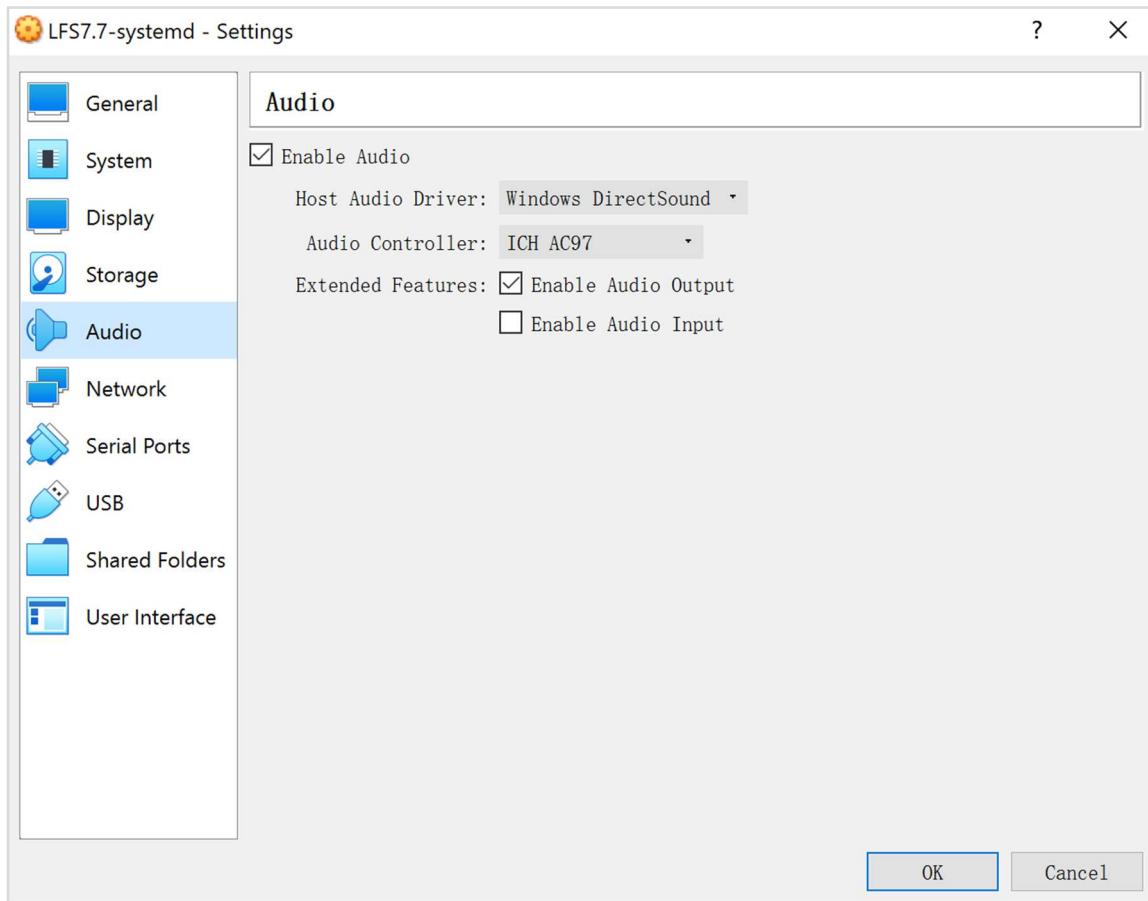
将显示器设置成 200% 的延展以获得较好的显示大小（请根据自己显示器实际分辨率设置此参数）：



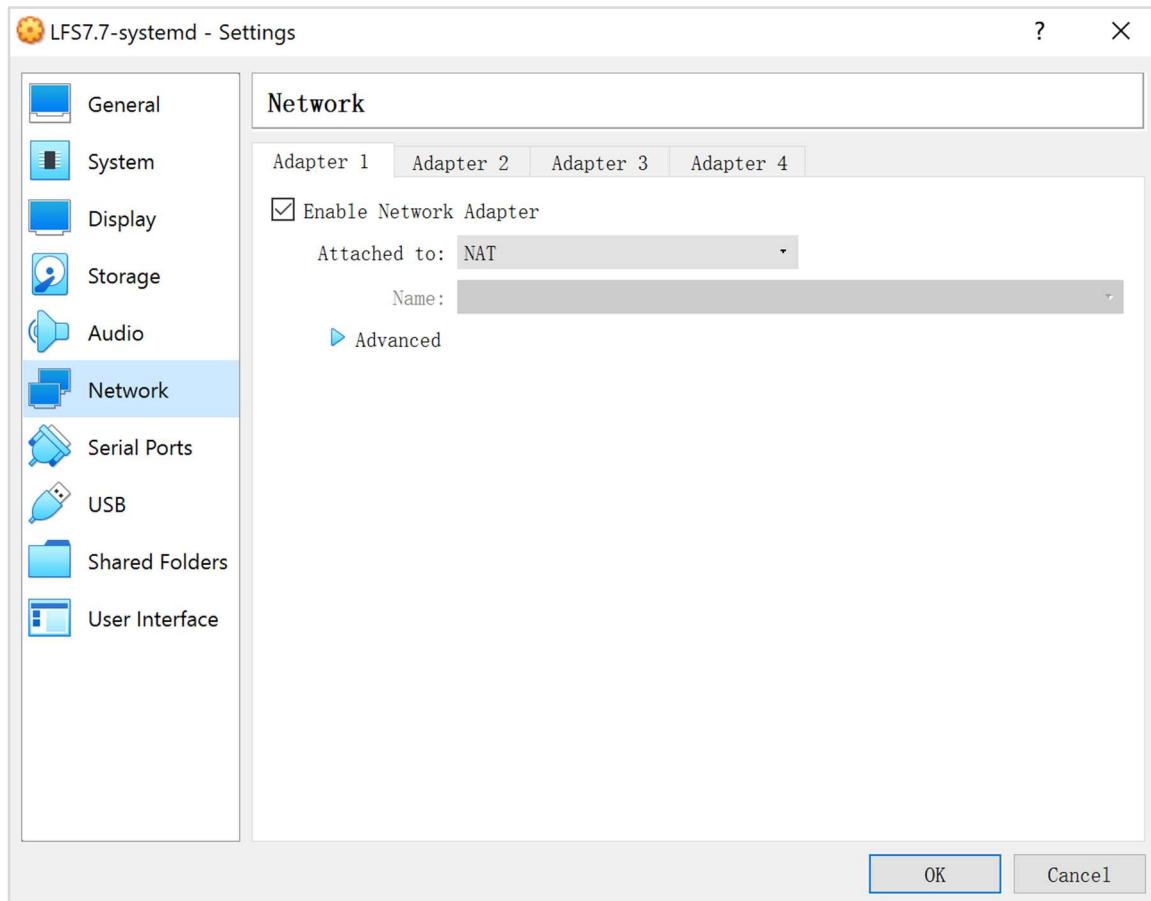
硬盘和光驱：



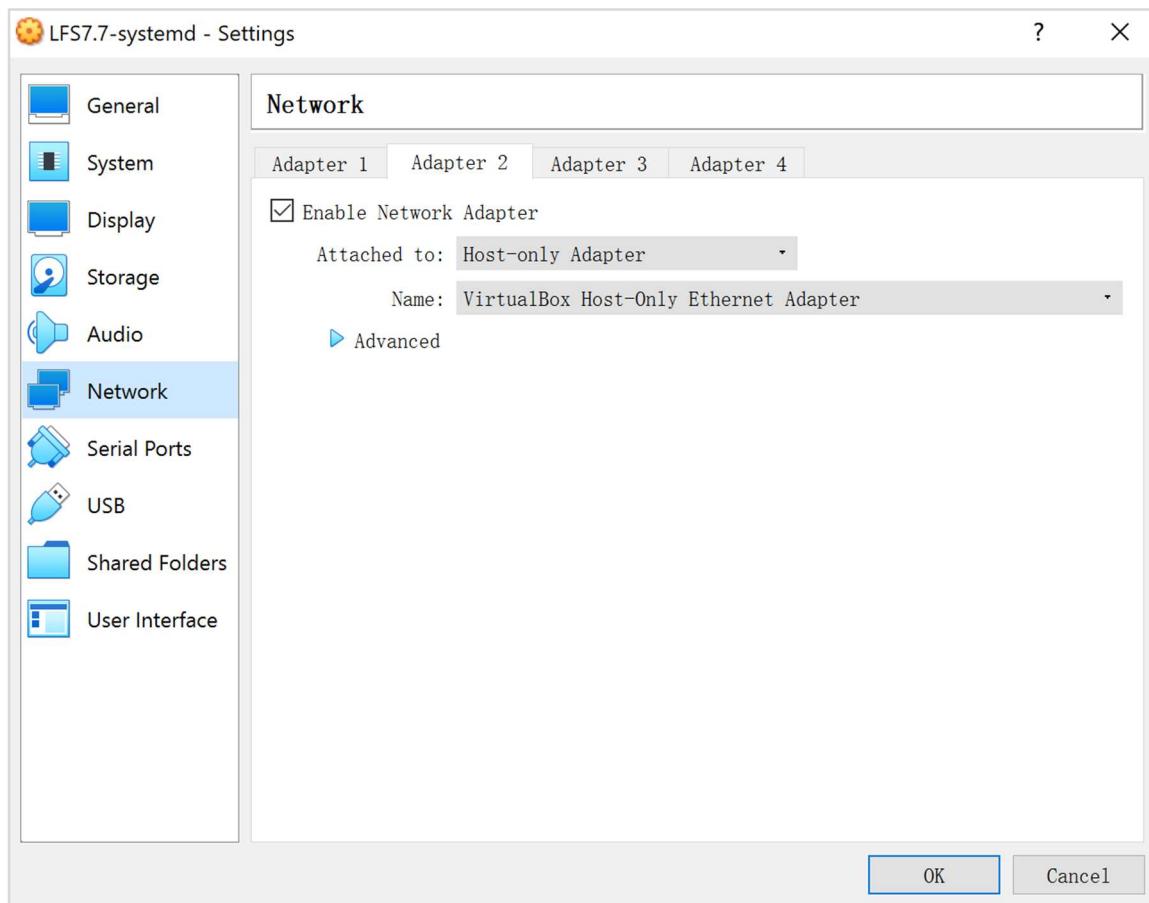
声音设备保持默认设置：



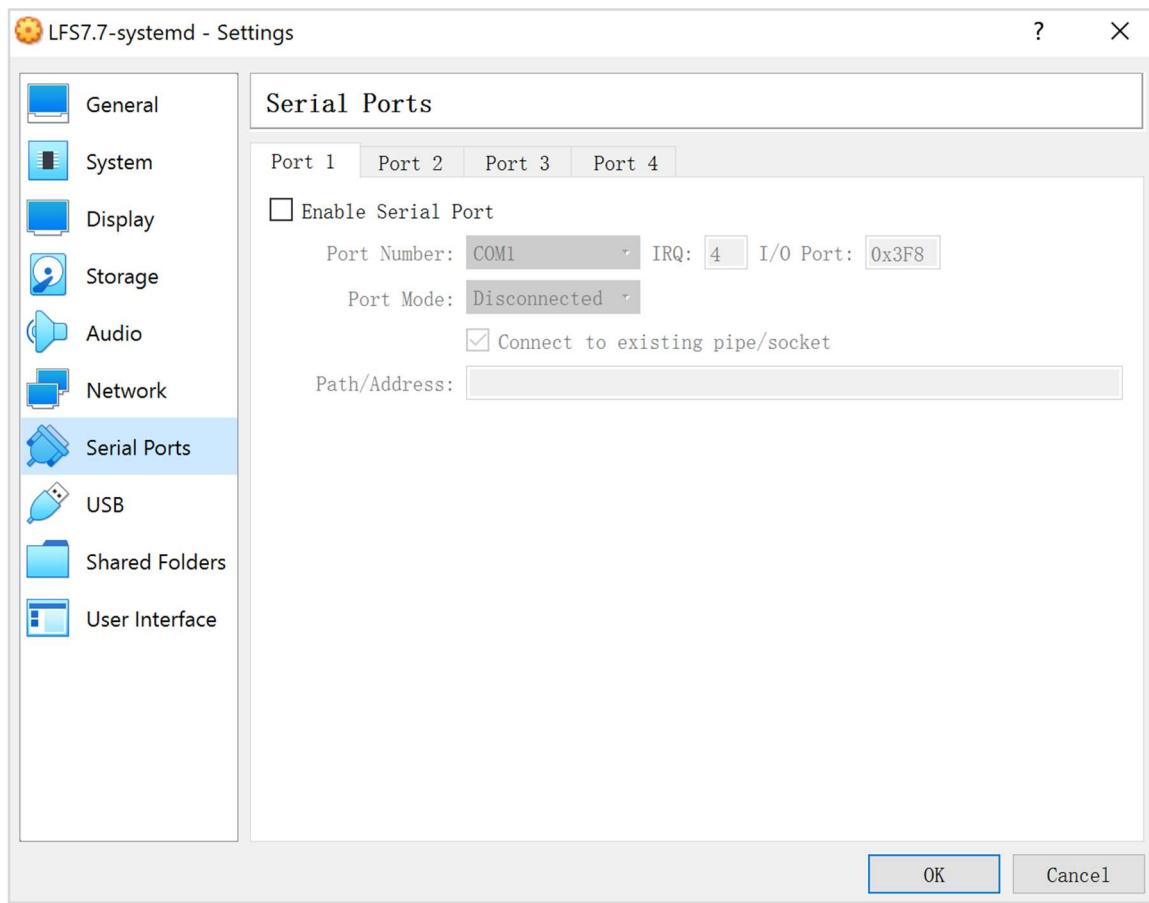
设置两张网卡，一张时默认的 NAT 模式（以便从虚拟机中访问外网）：



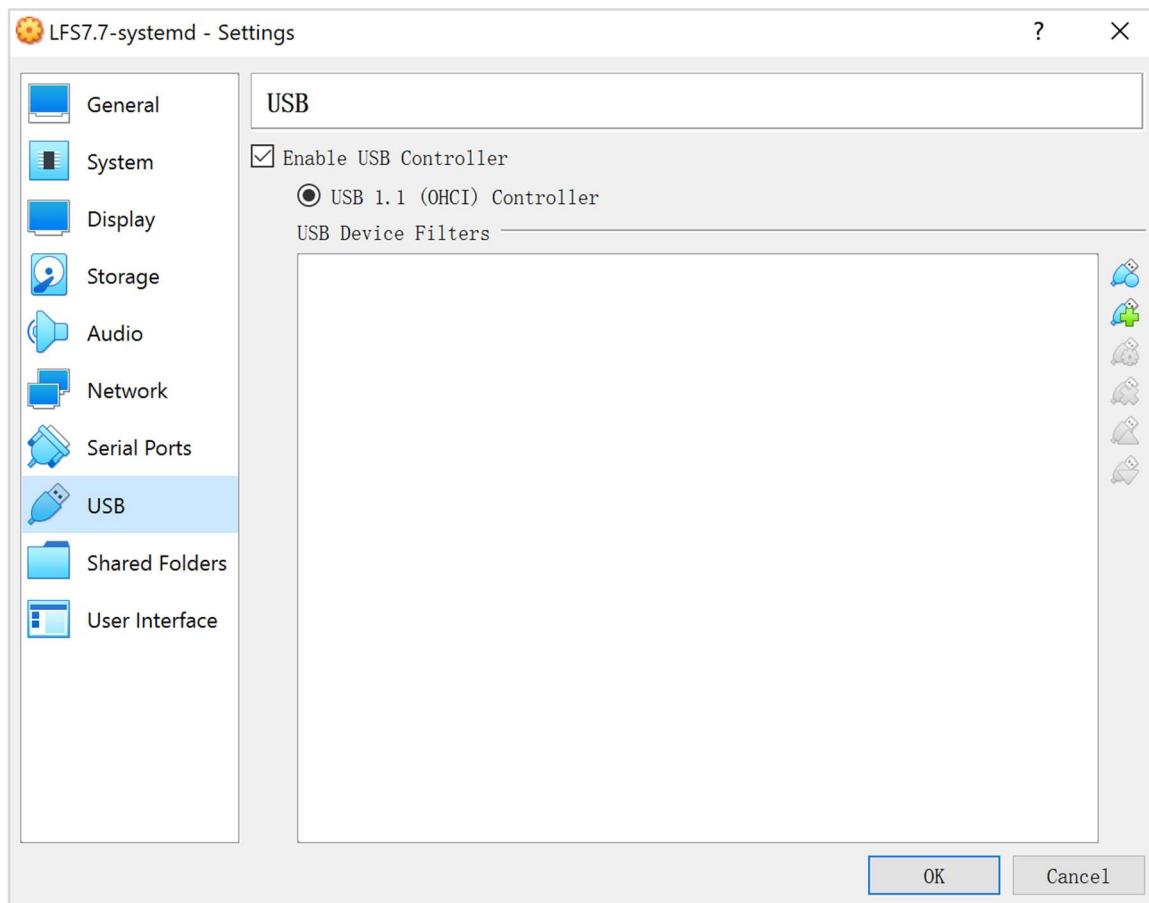
一张是 Host-only 模式 (以便从该虚拟机的宿主机访问它) :



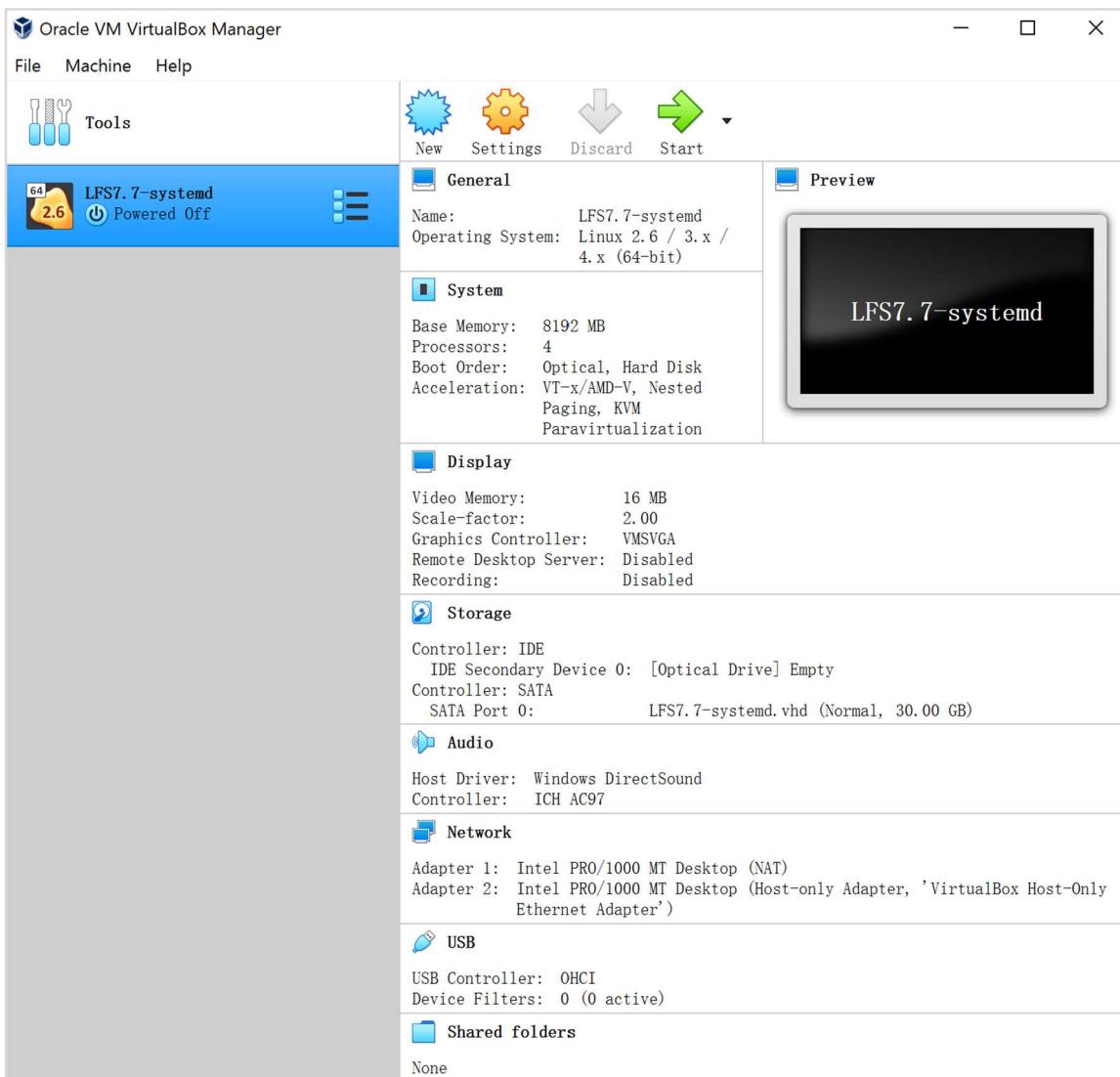
串口设置保持默认：



USB 设置保持默认：



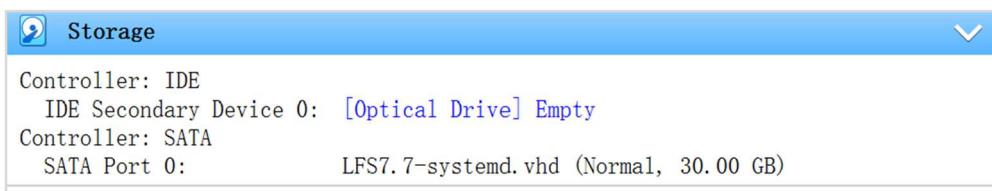
这是此时的整个虚拟机概况：



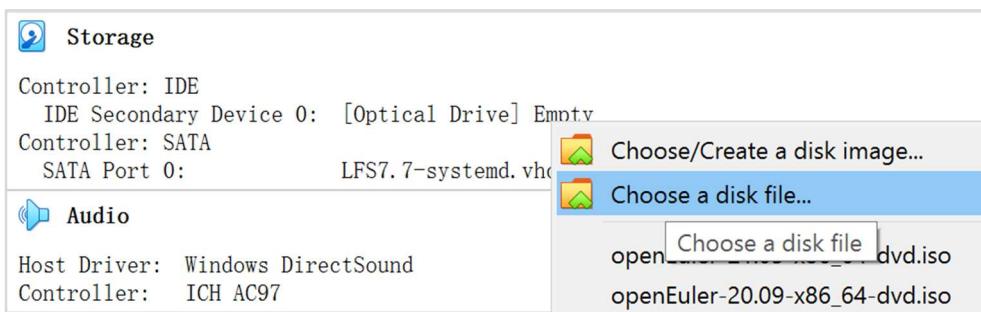
2.2 安装 openEuler 操作系统

2.2.1 将 openEuler20.09_x86-64 镜像装载到光驱

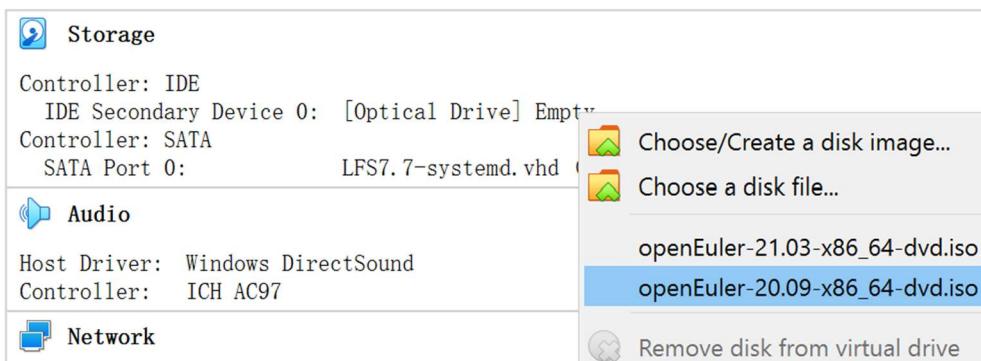
温馨提示：这里需要事先将 openEuler20.09_x86-64 镜像下载到本地。



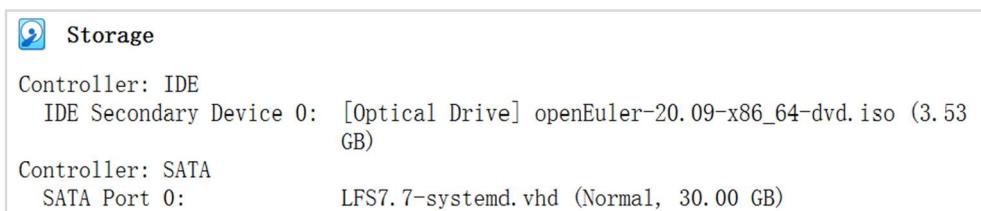
点击如上图所示“Optical Drive”（光驱）文字按钮。



点击“选择一个磁盘文件”然后选择先前自己下载到本地磁盘的 openEuler 安装镜像。



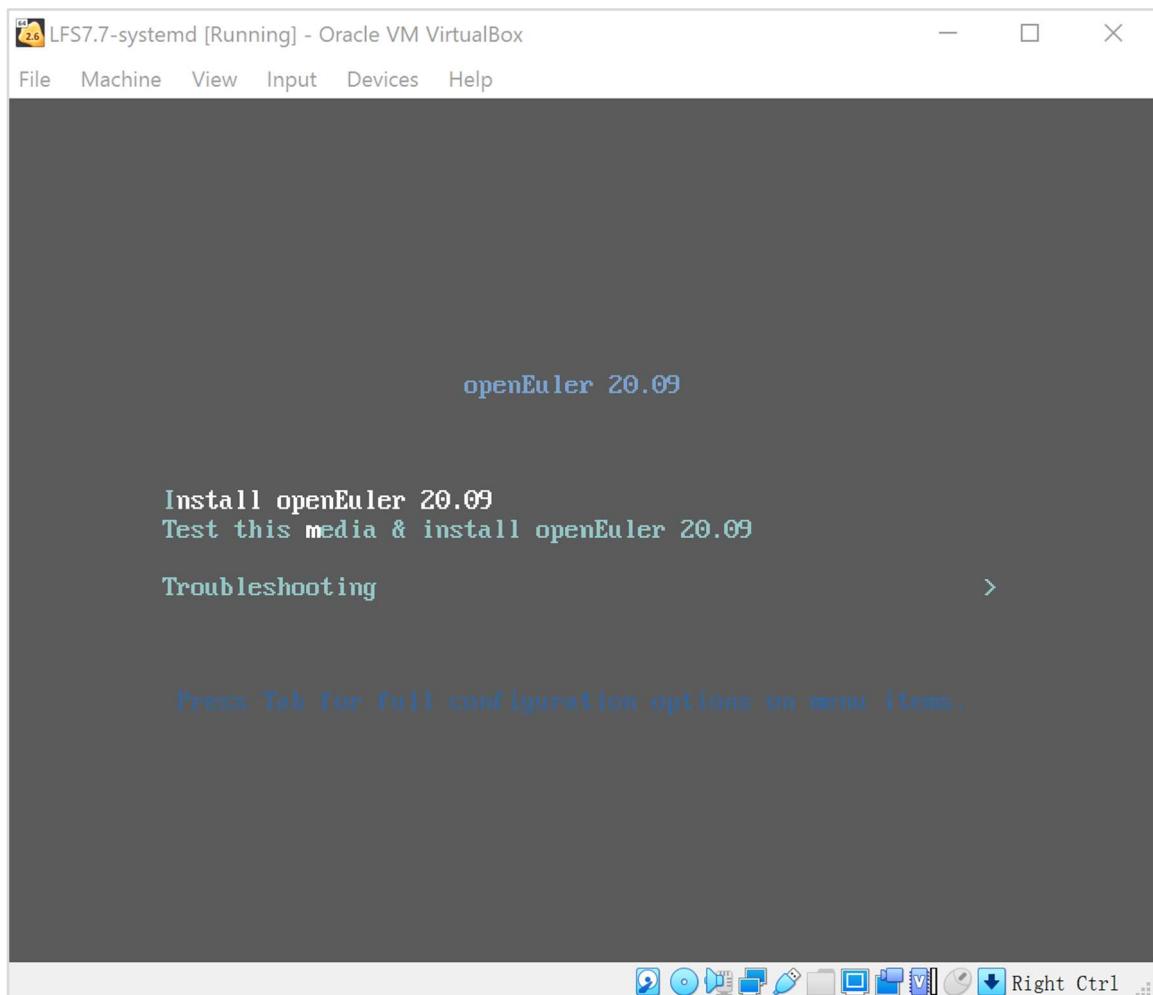
如果您已经执行过这个操作，则在菜单项中将有该镜像的名称，选中该名称的菜单项即可。



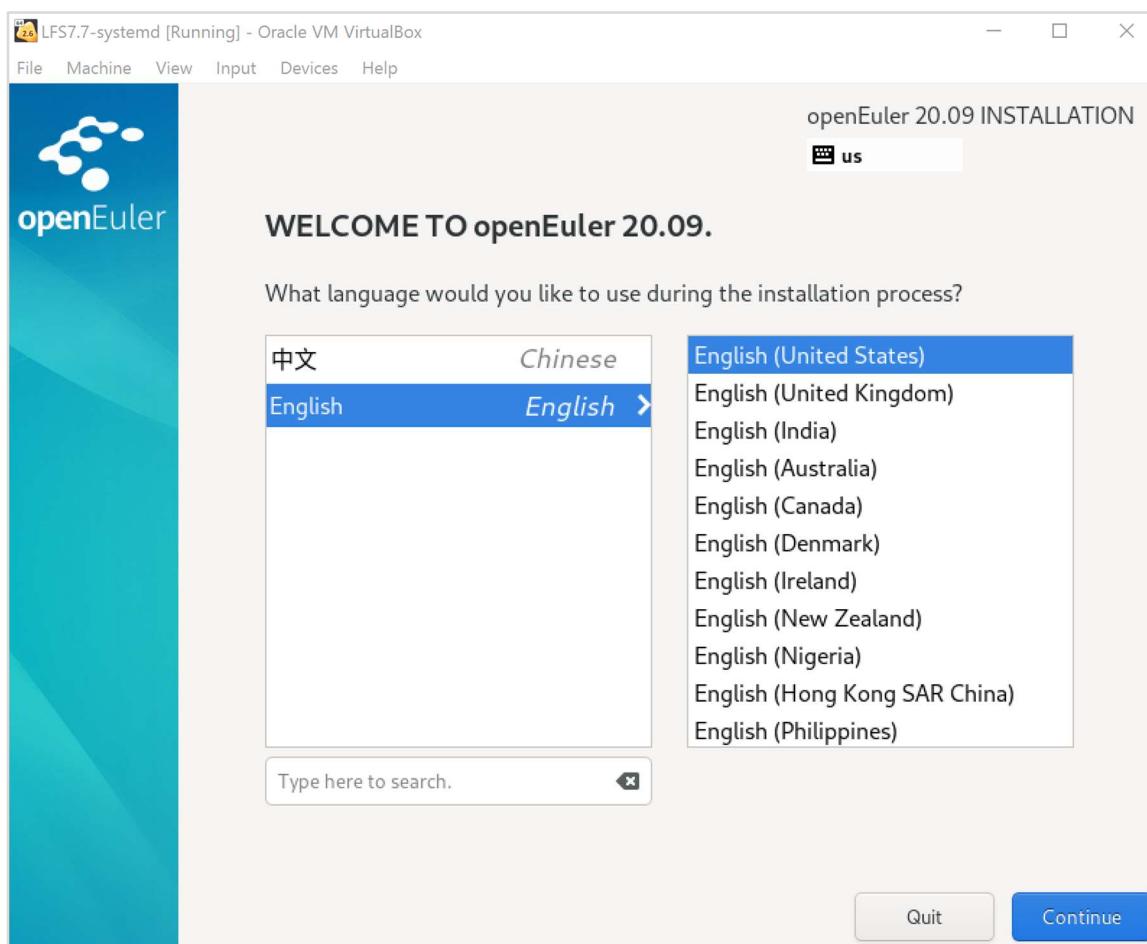
操作完毕后光驱中会显示该镜像的名称。

2.2.2 安装操作系统

启动虚拟机，移动键盘的上下键选择“Install openEuler 20.09”菜单项并按下回车键进入安装界面：



选择英文版安装：



保持安装磁盘的默认设置：

INSTALLATION DESTINATION

Done

openEuler 20.09 INSTALLATION

us

Device Selection

Select the device(s) you'd like to install to. They will be left untouched until you click on the main menu's "Begin Installation" button.

Local Standard Disks

30 GiB	
ATA VBOX HARDDISK	
sda / 30 GiB free	

Disks left unselected here will not be touched.

Specialized & Network Disks

	Add a disk...
---	---------------

Disks left unselected here will not be touched.

Storage Configuration

Automatic Custom

I would like to make additional space available.

[Full disk summary and boot loader...](#)

1 disk selected; 30 GiB capacity; 30 GiB free [Refresh...](#)

保持安装软件的默认设置：

SOFTWARE SELECTION

Done

openEuler 20.09 INSTALLATION

us

Base Environment

Minimal Install
Basic functionality.

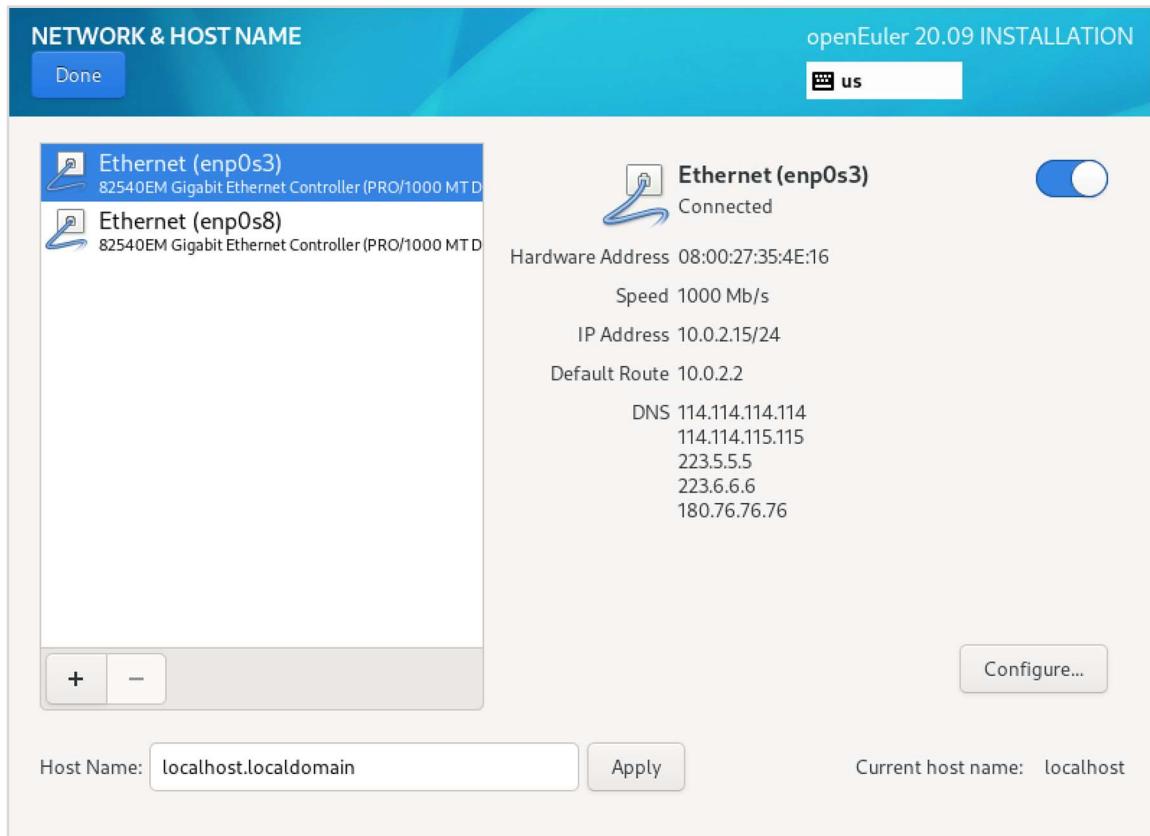
Server
An integrated, easy-to-manage server.

Virtualization Host
Minimal virtualization host.

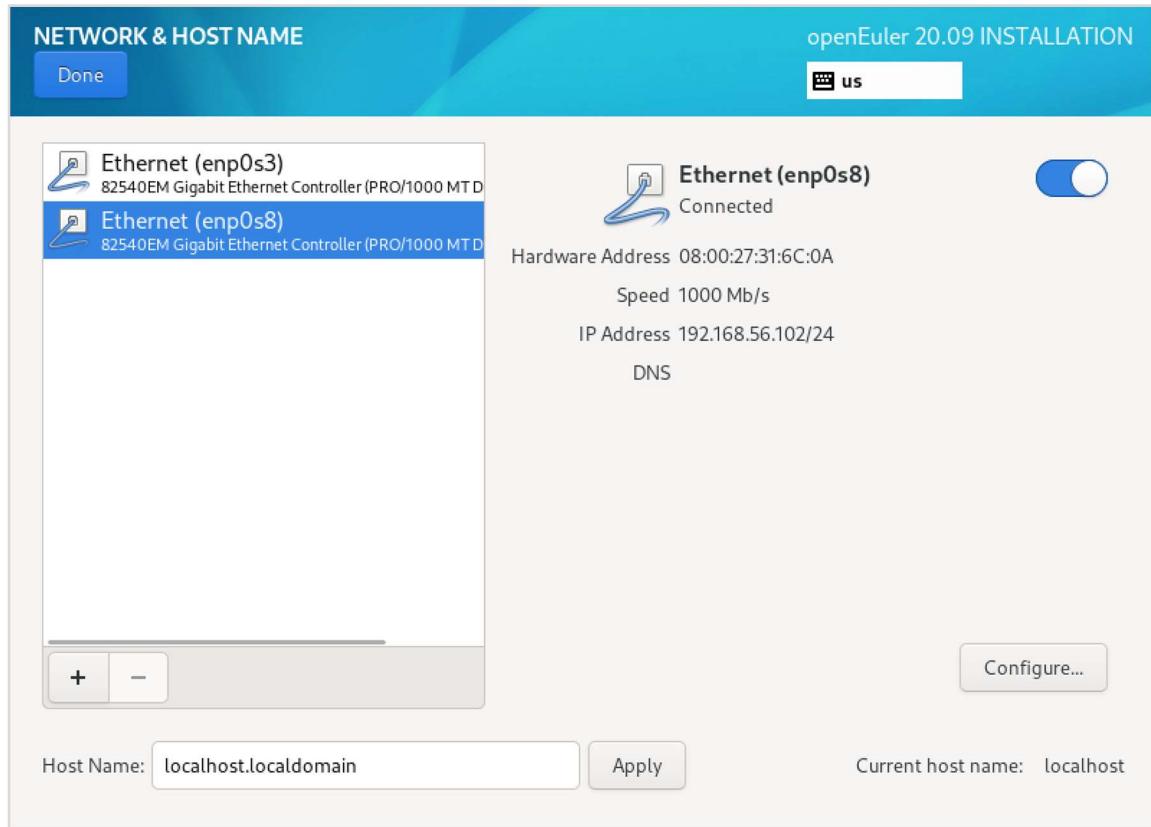
Additional software for Selected Environment

- Standard**
The standard installation.
- Container Management**
Tools for managing Linux containers
- Development Tools**
A basic development environment.
- Headless Management**
Tools for managing the system without an attached graphical console.
- Legacy UNIX Compatibility**
Compatibility programs for migration from or working with legacy UNIX environments.
- Network Servers**
These packages include network-based servers such as DHCP, Kerberos and NIS.
- Scientific Support**
Tools for mathematical and scientific computations, and parallel computing.
- Security Tools**
Security tools for integrity and trust verification.
- System Tools**
This group is a collection of various tools for the system, such as the client for connecting to CMB shares.

正常情况下，第一张网卡 connected：

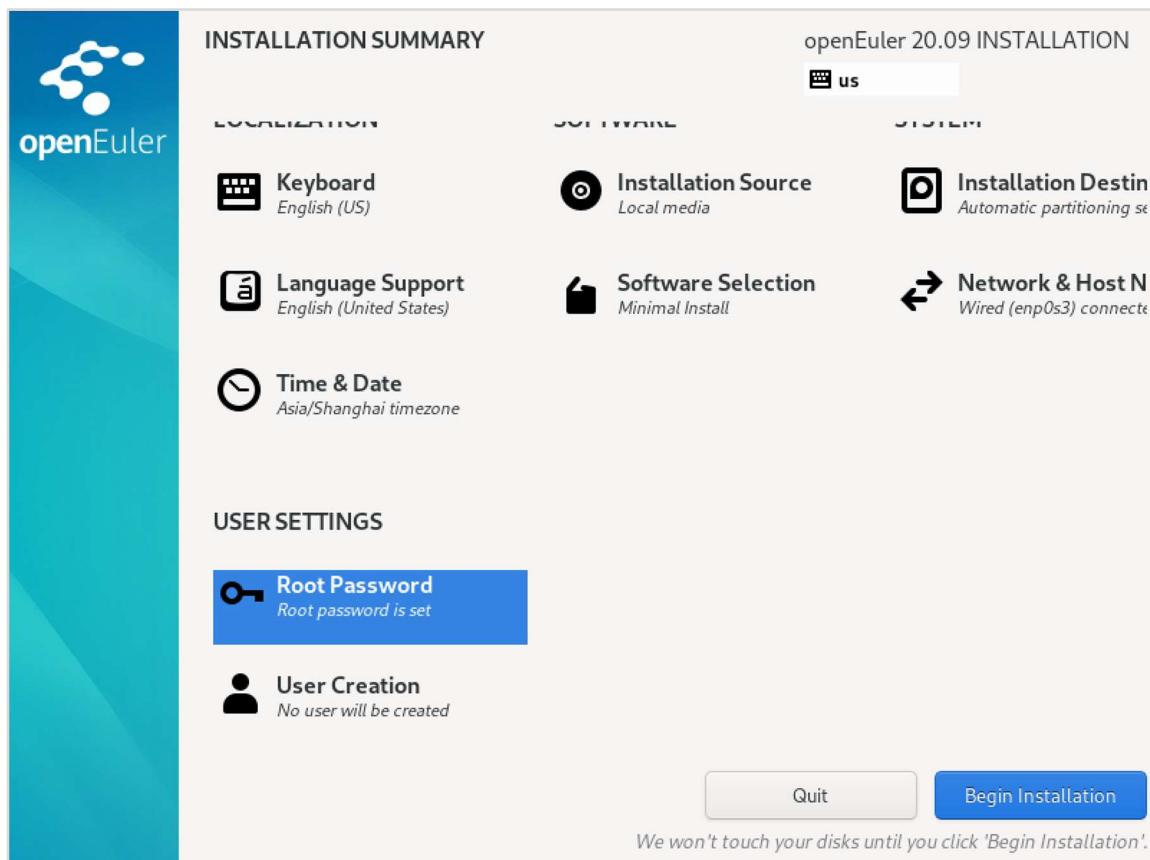


第二张网卡也 connected：

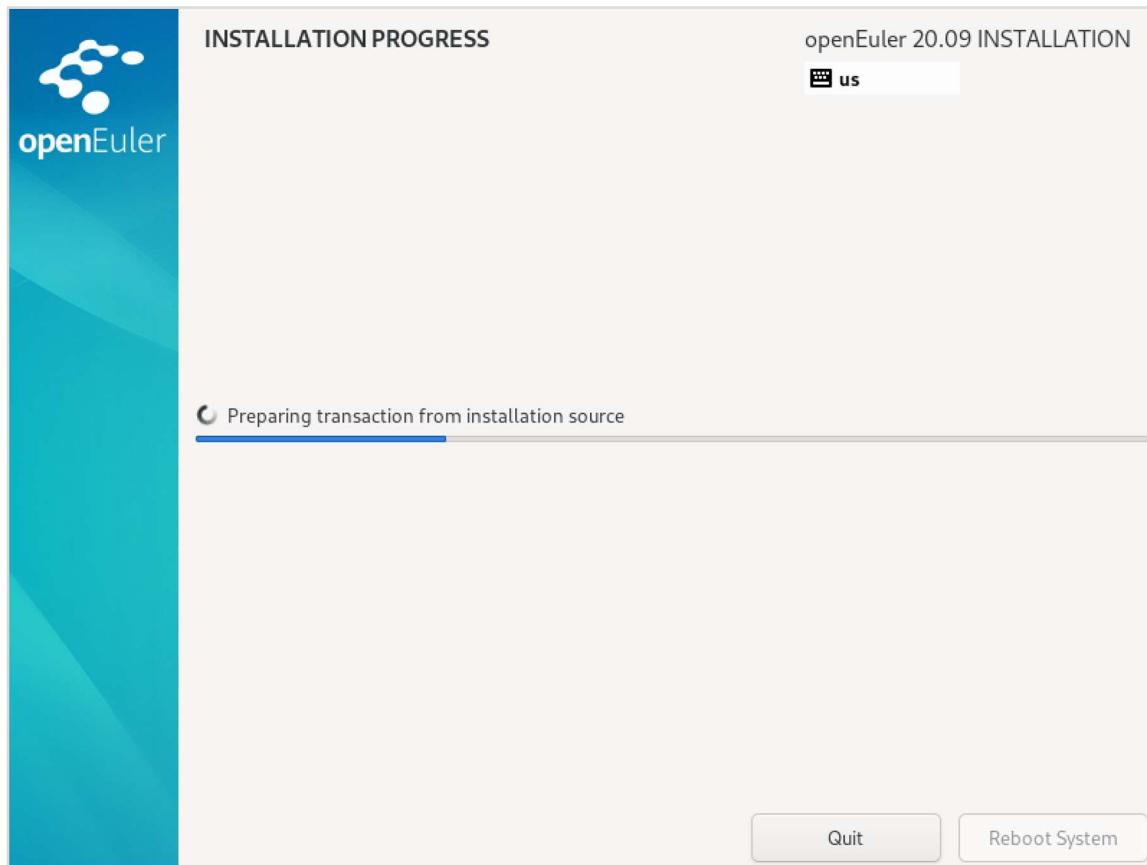


设置 Root Password

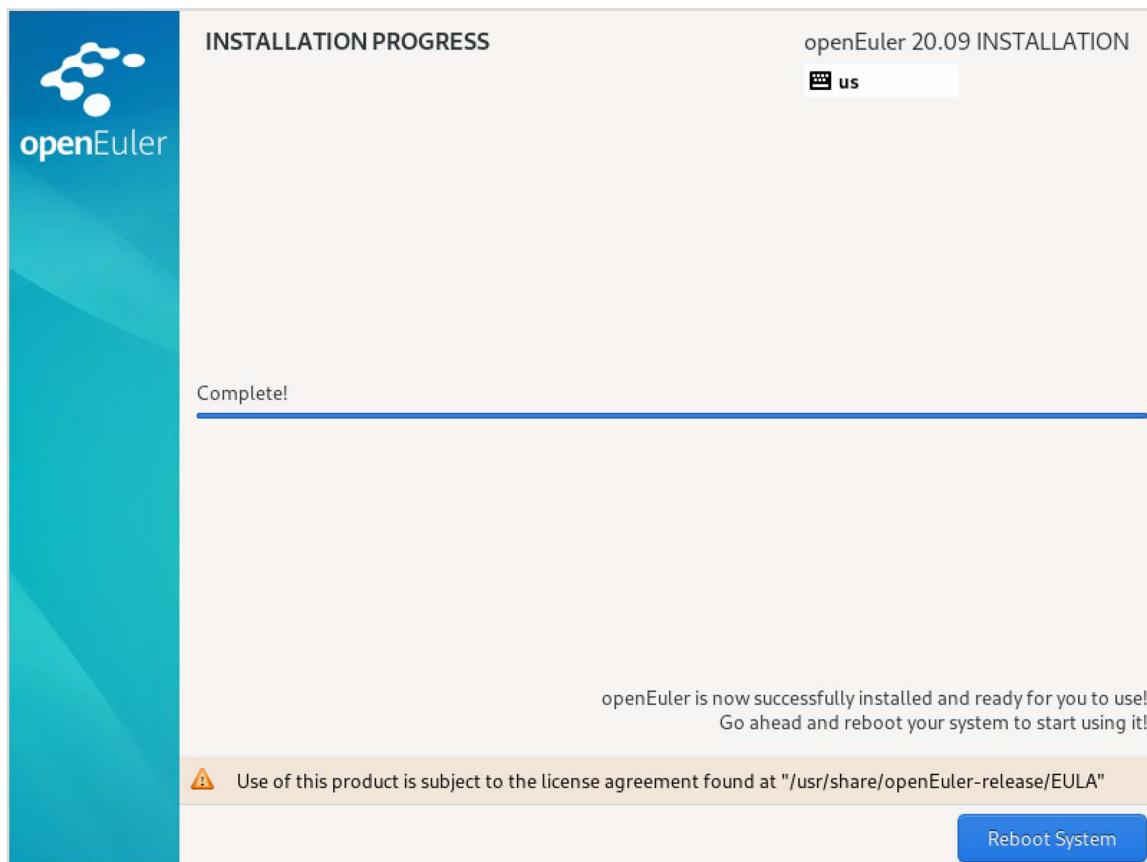
注意：只需要设置 root 账户密码即可，无需再单独创建用户，root 账户密码必须设置。



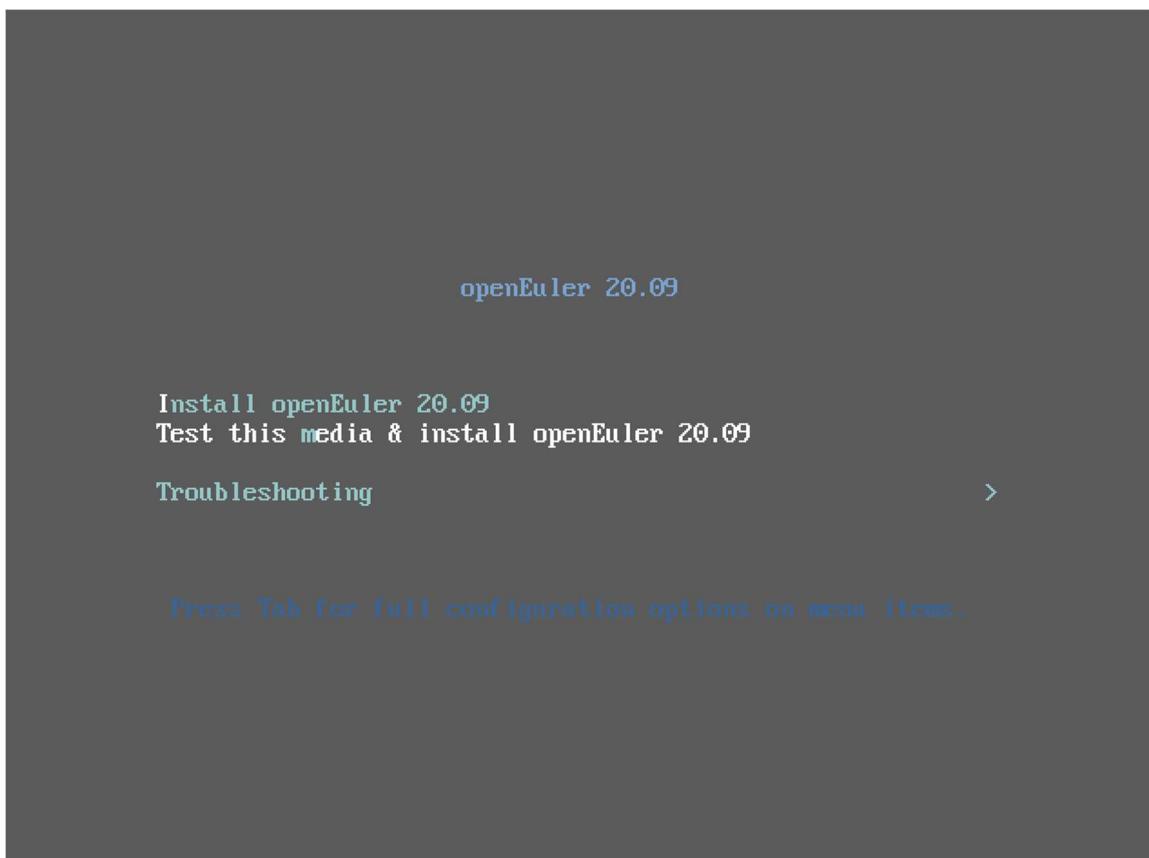
点击“开始安装”按钮开始安装：



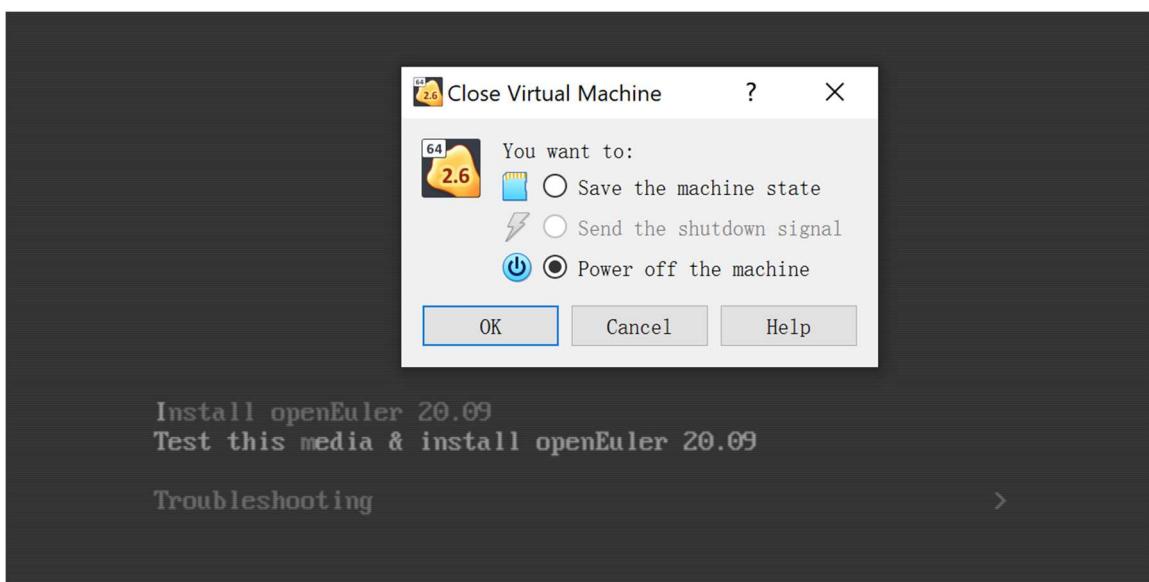
安装完成后点击“重启系统”按钮：



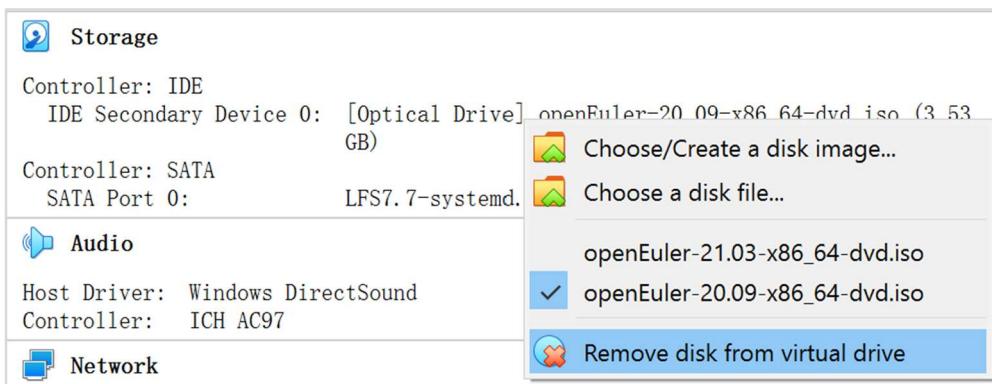
再次进入菜单选择界面时，移动键盘的上下键以将系统停留在该界面：



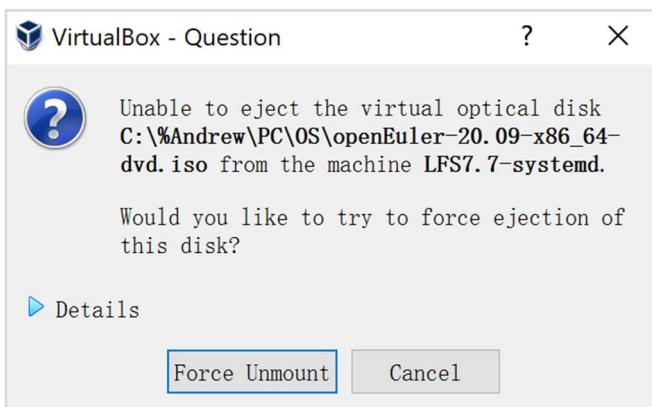
这时需要关机虚拟机：



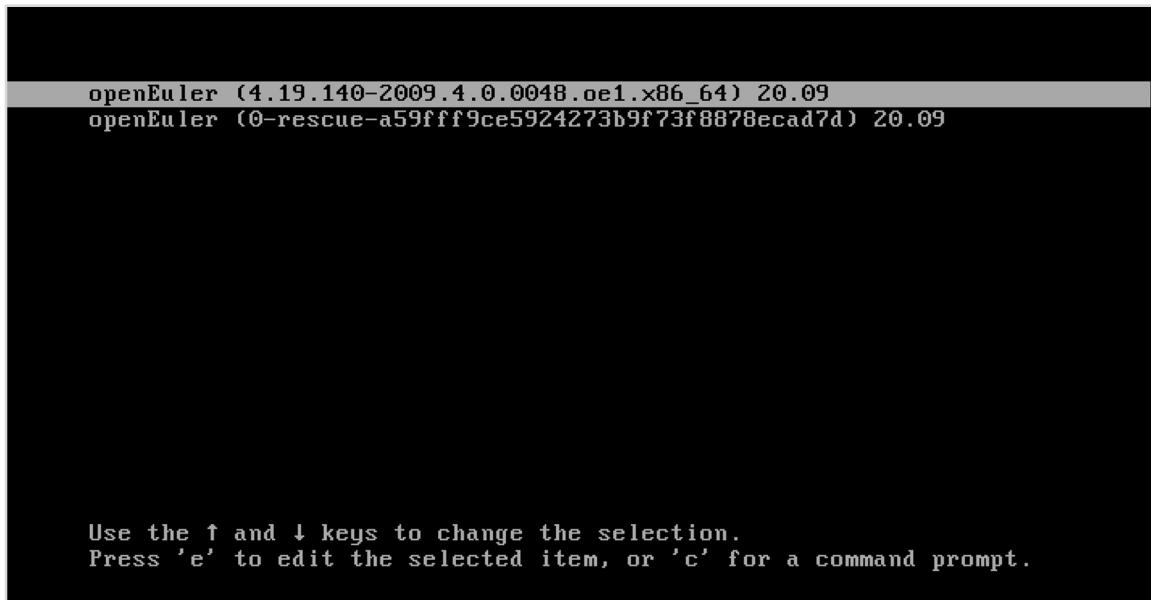
移出光驱中的镜像：



若提示是否强行移出则选择强行移出：



重启虚拟机，系统进入 openEuler 启动界面，用上下键选择第一个菜单项并按回车键启动（默认也是以第一个菜单项启动）：



先在 VirtualBox 中以 root 用户登录 openEuler 操作系统：

```
Authorized users only. All activities may be monitored and reported.
localhost login: root
Password:
[ 21.824008] systemd-xdg-autostart-generator[2083]: Not generating service for XDG autostart app-a
t\x2dspi\x2ddbus\x2dbus-autostart.service, startup phases are not supported.
Last login: Wed Apr 28 18:12:06 on ttym1

Authorized users only. All activities may be monitored and reported.

Welcome to 4.19.140-2009.4.0.0048.oe1.x86_64

System information as of time: Wed 28 Apr 2021 06:12:48 PM CST

System load:  0.34
Processes:   123
Memory used: 4.0%
Swap used:  0.0%
Usage On:    12%
IP address: 10.0.2.15
IP address: 192.168.56.102
Users online: 1

[root@localhost ~]# _
```

为便于操作，建议使用终端工具 putty、xshell 等通过 ssh 命令以 root 身份登录 openEuler，如：

```
ssh root@192.168.56.102
```

注意：您应该用自己虚拟机的 IP 地址替换上述 IP 地址。

```
C:\Users\AndyZ>ssh root@192.168.56.102
Authorized users only. All activities may be monitored and reported.
root@192.168.56.102's password:

Authorized users only. All activities may be monitored and reported.
Last login: Wed Apr 28 18:12:48 2021

Authorized users only. All activities may be monitored and reported.
Last login: Wed Apr 28 18:12:48 2021

Welcome to 4.19.140-2009.4.0.0048.oe1.x86_64
System information as of time: Wed 28 Apr 2021 06:16:32 PM CST
System load:      0.00
Processes:        125
Memory used:     4.1%
Swap used:       0.0%
Usage On:         1.2%
IP address:       10.0.2.15
IP address:       192.168.56.102
Users online:    2
```

注意：以上登录过程中输入密码时不会有任何显示。

至此，已完成 openEuler 虚拟机安装，您可以开始在 openEuler 环境下工作学习了。

3 配置开发环境

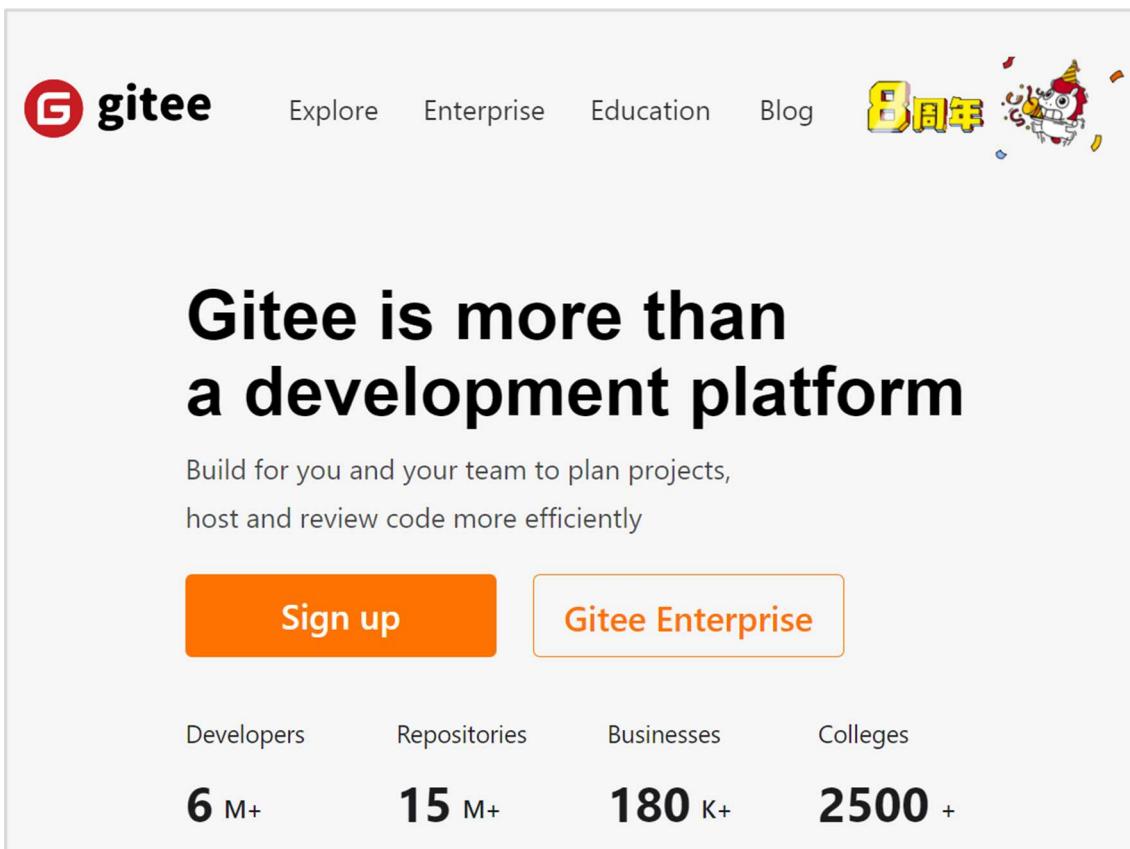
openEuler 社区的代码托管在 gitee.com

3.1 注册 gitee 账户

步骤 1 打开 gitee 网站

网站链接：<https://gitee.com/>

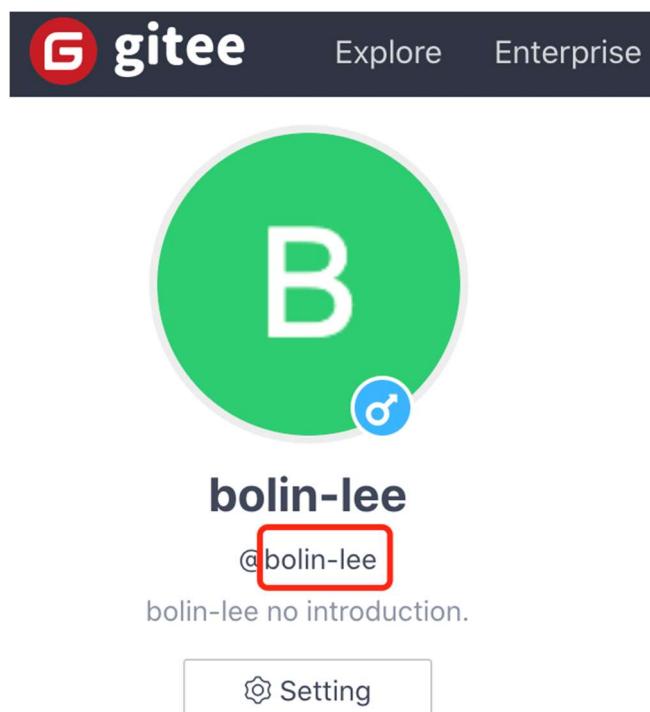
步骤 2 注册自己的 gitee 账户



点击“Sign up”进行注册。

注意：最好以自己私人邮箱进行注册。注册完毕后以该账号登录 gitee。

在自己的 gitee 主页查看个人 gitee-id，签署 CLA 的时候会用。



Explore Enterprise

Bolin-lee
@bolin-lee
bolin-lee no introduction.

Setting

3.2 签署 openEuler 社区贡献者许可协议 (CLA)

签署链接：

<https://clasign.osinfra.cn/sign/Z2l0ZWUIMkZvcGVuZXVsZXI=>



选择“Sign Individual CLA (签署个人 CLA)”按钮进行签署。



The image shows a registration form for a Gitee-ID account. It consists of several input fields and a green 'Sign Up' button at the bottom.

* Gitee-ID	请输入Gitee-ID	
* 邮箱	请输入邮箱	
* 姓名	请输入姓名	
电话	请输入电话	
传真	请输入传真	
地址	请输入地址	
* 验证码	请输入验证码	发送验证码

*为必填项

我已经阅读了[隐私政策](#)，并同意在香港通过[CLA签署平台](#)处理我的数据

签署

按照提示填写信息，Gitee-ID 是您自己的 gitee 账号，邮箱也要与 gitee 账号的邮箱保持一致。然后阅读“隐私政策”，如果同意就勾选前面的选择框，然后点击“签署”按钮进行签署。

3.3 安装配置 git

git 是一款优秀的项目版本控制方案，具体介绍参考以下链接：

<https://git-scm.com/book/zh/v2>

步骤 1 Git 安装

在刚刚安装的 openEuler 环境下运行以下命令。

```
yum install -y git
```

步骤 2 git 初始设置

若是第一次使用 git 命令，则要设置姓名和邮箱（请用英文输入）。

```
git config --global user.name "your-user-name"  
git config --global user.email "your-email-address-on-gitee"
```

注意邮箱地址应与 gitee 账号的邮箱地址保持一致。

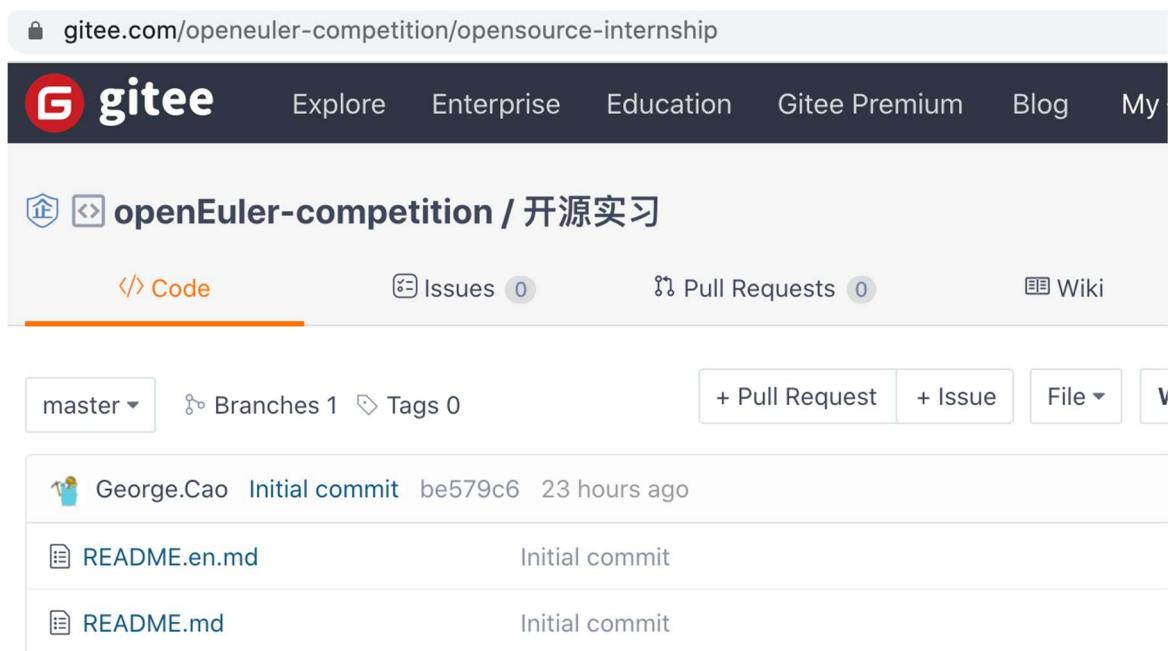
4 PR 提交

Pull Request，在开源社区也常常被简称为 PR，是自己修改源代码后，请求上游仓库采纳该修改时采取的一种行为。接下来我们通过向社区提交一个简单的 PR（将第二章安装 openEuler 虚拟机的完成界面截图提交）来展示参与开源社区贡献的基本流程。

4.1 通过 PR 提交作业

步骤 1 进入本次开源实习官方代码仓

<https://gitee.com/openeuler-competition/opensource-internship>



The screenshot shows the Gitee repository page for 'openeuler-competition / 开源实习'. The repository has 1 branch and 0 tags. It contains two files: README.en.md and README.md, both of which are initial commits by George.Cao. There are 0 issues and 0 pull requests.

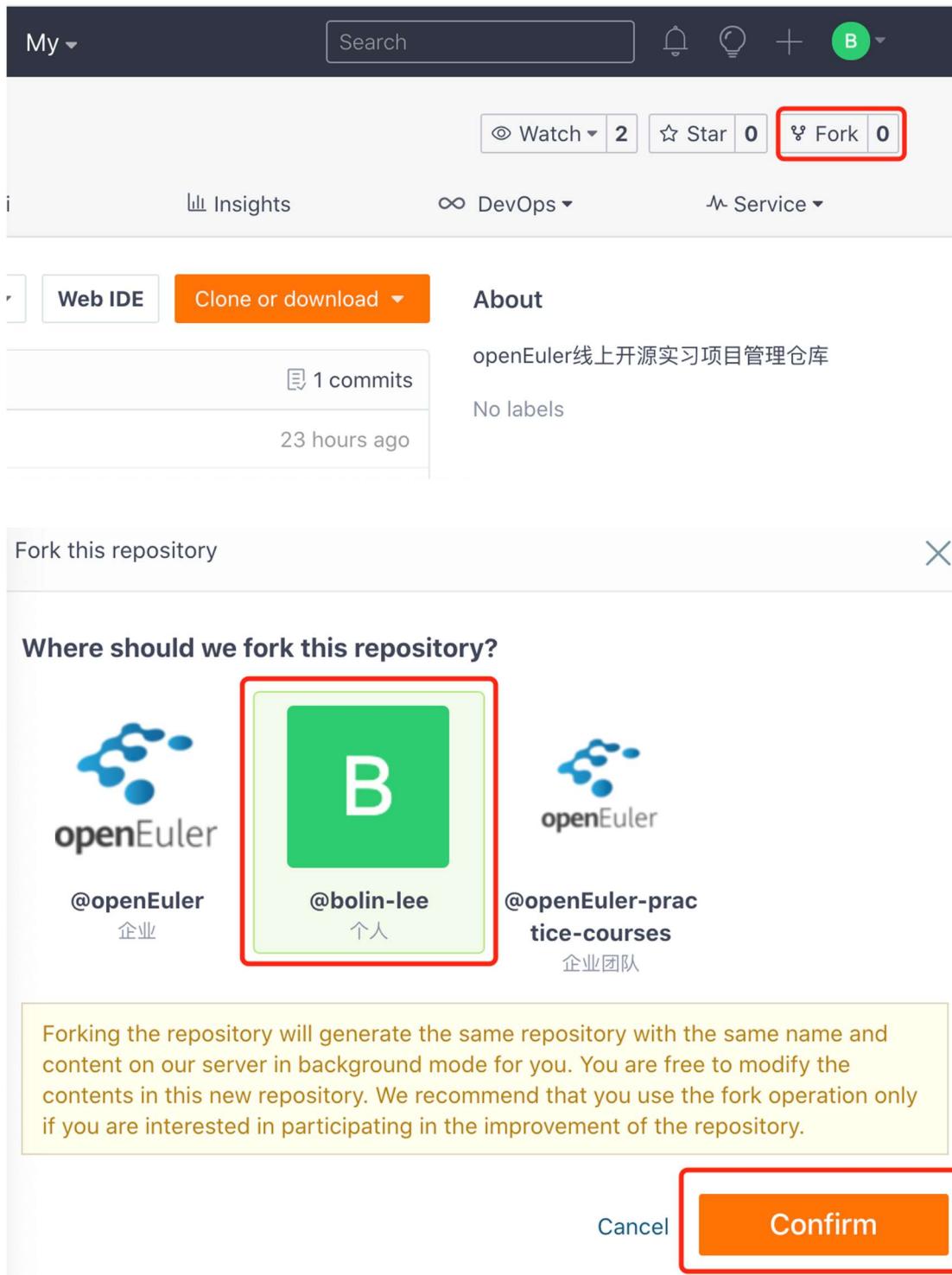
master ▾ Branches 1 Tags 0 + Pull Request + Issue File ▾

George.Cao Initial commit be579c6 23 hours ago

README.en.md Initial commit

README.md Initial commit

步骤 2 fork 官方仓至个人私有仓：



The screenshot shows a GitHub repository page for 'openEuler线上开源实习项目管理仓库'. The 'Fork' button in the top right corner is highlighted with a red box. Below the forked repository, a modal window titled 'Fork this repository' is displayed. The modal asks 'Where should we fork this repository?' and lists four options: '@openEuler 企业' (selected), '@bolin-lee 个人' (highlighted with a red box), '@openEuler-practice-courses 企业团队', and another '@openEuler' entry. A descriptive box explains the fork process. At the bottom are 'Cancel' and 'Confirm' buttons, with 'Confirm' also highlighted with a red box.

My ▾

Search

Watch 2 Star 0 Fork 0

Insights DevOps Service

Web IDE Clone or download

1 commits 23 hours ago

About

openEuler线上开源实习项目管理仓库

No labels

Fork this repository

Where should we fork this repository?

@openEuler 企业

@bolin-lee 个人

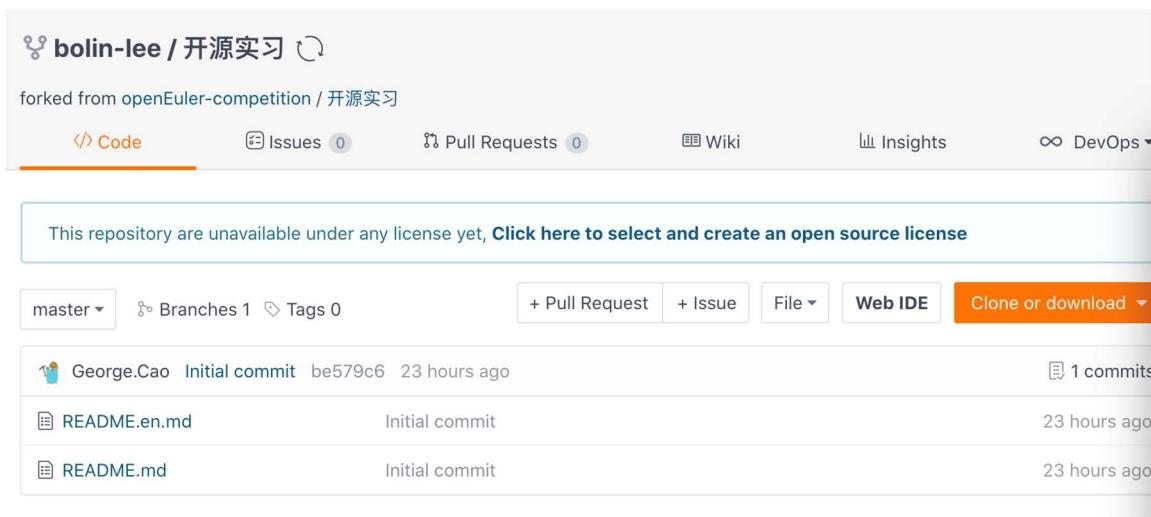
@openEuler-practice-courses 企业团队

@openEuler

Forking the repository will generate the same repository with the same name and content on our server in background mode for you. You are free to modify the contents in this new repository. We recommend that you use the fork operation only if you are interested in participating in the improvement of the repository.

Cancel Confirm

稍等几秒后，官方仓就 fork 至个人私有仓：



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master Branches 1 Tags 0 + Pull Request + Issue File Web IDE Clone or download

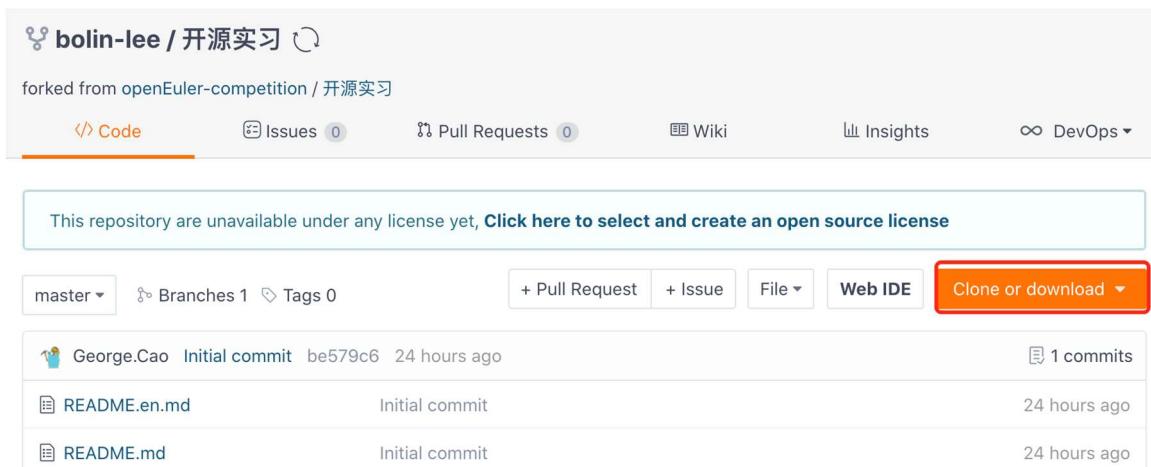
George.Cao Initial commit be579c6 23 hours ago 1 commits

README.en.md Initial commit 23 hours ago

README.md Initial commit 23 hours ago

步骤 3 将个人仓库 clone 至本地开发环境

先在 gitee 页面上拷贝仓库地址



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master Branches 1 Tags 0 + Pull Request + Issue File Web IDE Clone or download

George.Cao Initial commit be579c6 24 hours ago 1 commits

README.en.md Initial commit 24 hours ago

README.md Initial commit 24 hours ago

笔者的个人仓库地址为：<https://gitee.com/bolin-lee/opensource-internship.git>

以下的操作在 openEuler 虚拟机环境上执行：

```
git clone https://gitee.com/bolin-lee/opensource-internship.git
```

步骤 4 新增上游远程分支

```
cd opensource-internship
git remote add upstream https://gitee.com/openeuler-competition/opensource-internship.git
git pull upstream
```

先将官方仓库设置为远端分支，以便同步仓库内容；可以通过 `git branch -vva` 命令查看分支情况。

官方仓地址 copy 方式和个人仓一样：



This screenshot shows the GitHub repository page for 'openEuler-competition / 开源实习'. The 'Code' tab is selected. A yellow banner at the top states: 'This repository doesn't specify license. Without author's permission, this code is only for learning and cannot be used for other purposes.' Below the banner, the commit history is listed:

Commit	Author	Message	Date
Initial commit	George.Cao	be579c6	24 hours ago
README.en.md		Initial commit	24 hours ago
README.md		Initial commit	24 hours ago

步骤 5 创建本地仓库的开发分支

```
git checkout -b new_br upstream/master  
git branch
```

其中“`new_br`”分支名请根据自己的情况设置。然后可以用“`git branch`”查看当前位于哪个分支。

步骤 6 同步上游代码

```
git pull --rebase  
Already up to date.
```

步骤 7 在自己的仓库“测试任务”目录下建立文件夹

```
mkdir Nanjingdaxue-hanmeimei-b1
```

文件夹名称格式为“学校名拼音-姓名拼音-年级（本科大一至大四为 b1-b4，硕士为 m1-m3，博士为 d）”



This screenshot shows Joyee's fork of the 'openEuler-competition / 开源实习' repository. The 'Code' tab is selected. A message at the top says: '你当前开源项目尚未选择许可证 (LICENSE)，点此选择并创建开源许可'. Below the message, the commit history is listed:

Commit	Author	Message	Date
上传文件	Joyee	17a82ce	2天前
EXCEL		上传文件	2天前
测试任务		新建 测试任务	2个月前
README.en.md		Initial commit	2个月前
README.md		Initial commit	2个月前

步骤 8 openEuler 安装成功后，输入 `cat /etc/os-releases` 命令查看操作系统 Release 信息并截图

```
cat /etc/os-release
```

```
[root@host-192-168-1-22 .ssh]# cat /etc/os-release
NAME="openEuler"
VERSION="21.09"
ID="openEuler"
VERSION_ID="21.09"
PRETTY_NAME="openEuler 21.09"
ANSI_COLOR="0;31"

[root@host-192-168-1-22 .ssh]# _
```

步骤 9 在 root 用户组中创建自己名字对应的 Linux 用户、设置密码、切换到该用户，并截图

```
useradd -g root your_name
passwd your_name
su your_name
```

```
[root@openEuler opt]# useradd -g root zhengzhenyu
Creating mailbox file: File exists
[root@openEuler opt]# passwd zhengzhenyu
Changing password for user zhengzhenyu.
New password:
BAD PASSWORD: The password contains less than 3 character classes
Retype new password:
passwd: all authentication tokens updated successfully.
[root@openEuler opt]# su zhengzhenyu

Welcome to 5.10.0-5.10.0.24.oe1.x86_64
System information as of time: Tue Nov 23 02:46:54 PM CST 2021
System load:      0.00
Processes:        190
Memory used:     19.5%
Swap used:       0%
Usage On:         20%
IP address:      10.0.2.4
Users online:    1

[zhengzhenyu@openEuler opt]$
```

步骤 10 将步骤 8 和步骤 9 的截图放到步骤 7 里创建好的文件夹下

使用 `scp` 命令或者带界面的 shell 工具将图片传到虚拟机内部刚创建好的文件夹下面。

```
BolinLeedeMacBook-Pro:capture bolin$ ls  
openEuler-virtuak-machine.png  
BolinLeedeMacBook-Pro:capture bolin$  
BolinLeedeMacBook-Pro:capture bolin$ pwd  
/Users/bolin/Downloads/capture  
BolinLeedeMacBook-Pro:capture bolin$  
BolinLeedeMacBook-Pro:capture bolin$ scp openEuler-virtuak-machine.png root@7.250.  
8.106:/root/opensource-internship/Xibeigongyedaxue-libaolin-b4/  
  
Authorized users only. All activities may be monitored and reported.  
root@7.250.88.106's password:  
openEuler-virtuak-machine.png  
          100%   13KB   5.0MB/s  00:00  
BolinLeedeMacBook-Pro:capture bolin$
```

```
[root@localhost Xibeigongyedaxue-libaolin-b4]#  
[root@localhost Xibeigongyedaxue-libaolin-b4]# ls  
openEuler-virtuak-machine.png  
[root@localhost Xibeigongyedaxue-libaolin-b4]#  
[root@localhost Xibeigongyedaxue-libaolin-b4]#  
[root@localhost Xibeigongyedaxue-libaolin-b4]#
```

步骤 11 增加修改到本地到仓库中

```
git add Nanjingdaxue-hanmeimei-b1/  
git status
```

步骤 12 提交至本地仓库

```
git commit -m "Upload hanmeimei's homework"  
git status
```

步骤 13 Push 代码到自己的远程仓库

```
git push origin new_br  
git log
```

这时需要根据提示输入 gitee 账户名和密码。最后可以用“git log”查看日志。

步骤 14 到 gitee 网页查看自己的私有仓库并进行“Pull Requests”操作

forked from openEuler-competition / 开源实习

[Code](#) [Issues 0](#) [Pull Requests 0](#) [Wiki](#) [Insights](#) [DevOps ▾](#)

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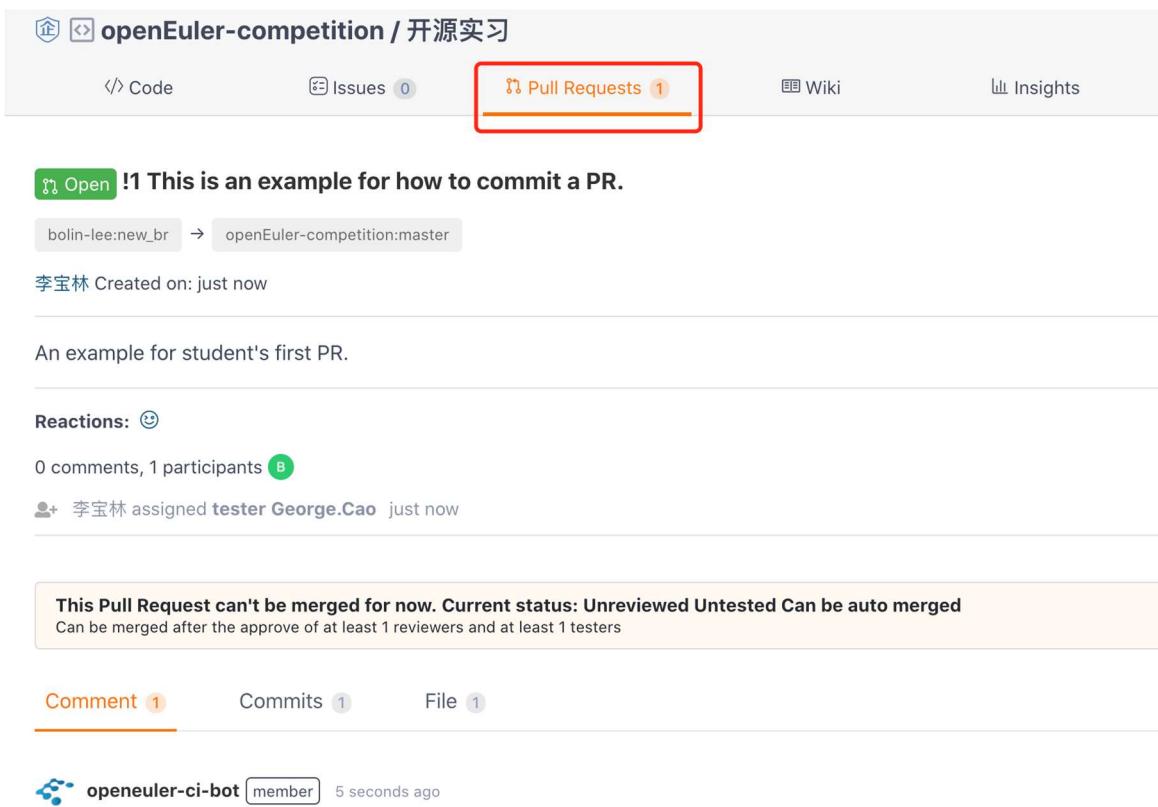
master ▾ [Branches 2](#) [Tags 0](#) [+ Pull Request](#) [+ Issue](#) [File ▾](#) [Web IDE](#) [Clone or download ▾](#)

File	Commit Message	Date
 George.Cao	Initial commit	be579c6 a day ago
 README.en.md	Initial commit	a day ago
 README.md	Initial commit	a day ago

下图是自己的私有仓和官方仓的修改对比。在私有仓库一侧选择我们修改的分支 new_branch，之前创建的目录和截图已经被提交在该分支上了；右侧官方仓分支维持不变。填写你的第一个 PR 的 title 及具体描述；title 一般简要描述本次 PR 的内容和目的，具体描述里可陈述 PR 要解决的问题、方案及原理分析。

随后点击 Create 完成 PR 创建。

步骤 15 在官方仓查看 PR 提交情况



!1 This is an example for how to commit a PR.

bolin-lee:new_br → openEuler-competition:master

李宝林 Created on: just now

An example for student's first PR.

Reactions: 😊

0 comments, 1 participants B

李宝林 assigned tester George.Cao just now

This Pull Request can't be merged for now. Current status: Unreviewed Untested Can be auto merged
Can be merged after the approve of at least 1 reviewers and at least 1 testers

Comment 1 Commits 1 File 1

openeuler-ci-bot member 5 seconds ago

这时作为社区的一个 contributor，您的 PR 已经提交完毕。如果您提交的是代码，系统一般会自动进行 test。接下来要等待社区的 committer 进行 review，如果合乎要求，他/她会进行/lgtm 动作。之后就需要社区的 maintainer 进行最后确认，如果一切顺利，他/她会进行/approve 动作，这之后，您的提交就会合入到上游官方仓库里去。关于这些流程的具体命令及其含义请参考后文列出的相关链接。

4.2 参考链接

- ✓ openEuler 社区贡献攻略：
<https://www.openeuler.org/zh/community/contribution/detail.html>
- ✓ gitee 工作流程：
<https://gitee.com/openeuler/community/blob/master/zh/contributors/Gitee-workflow.md>
- ✓ openEuler 社区 Bot commands：
<https://gitee.com/openeuler/community/blob/master/en/sig-infrastructure/command.md>