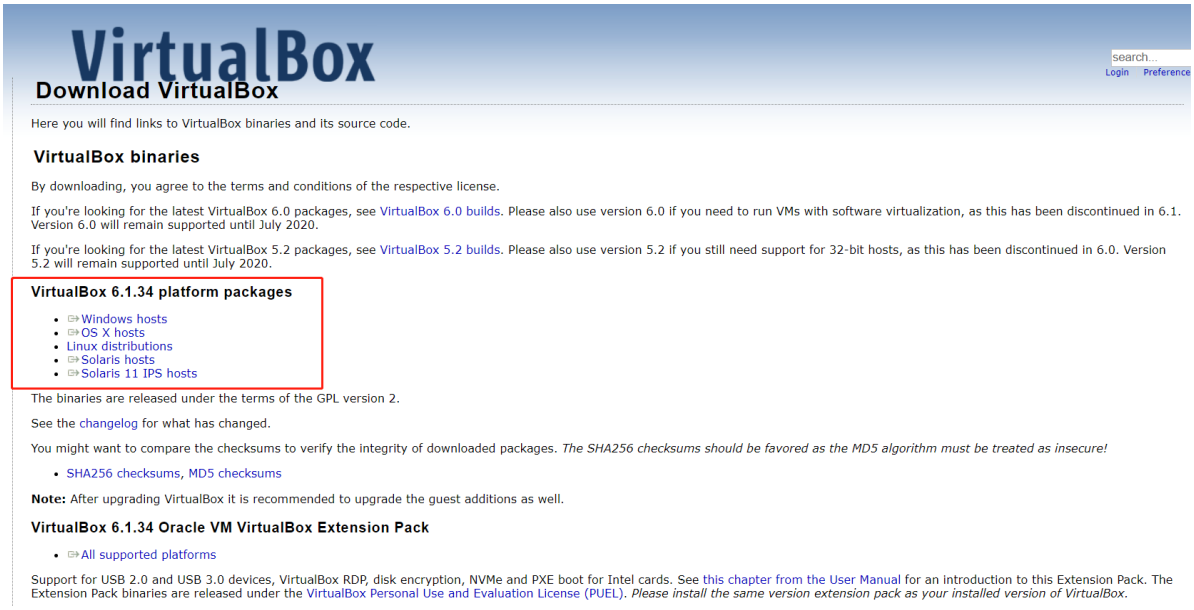
Tutorial for Installing Ubuntu 22.04 on Virtual Box

1. Install Virtual Box

Go to [Downloads – Oracle VM VirtualBox] and download corresponding version.

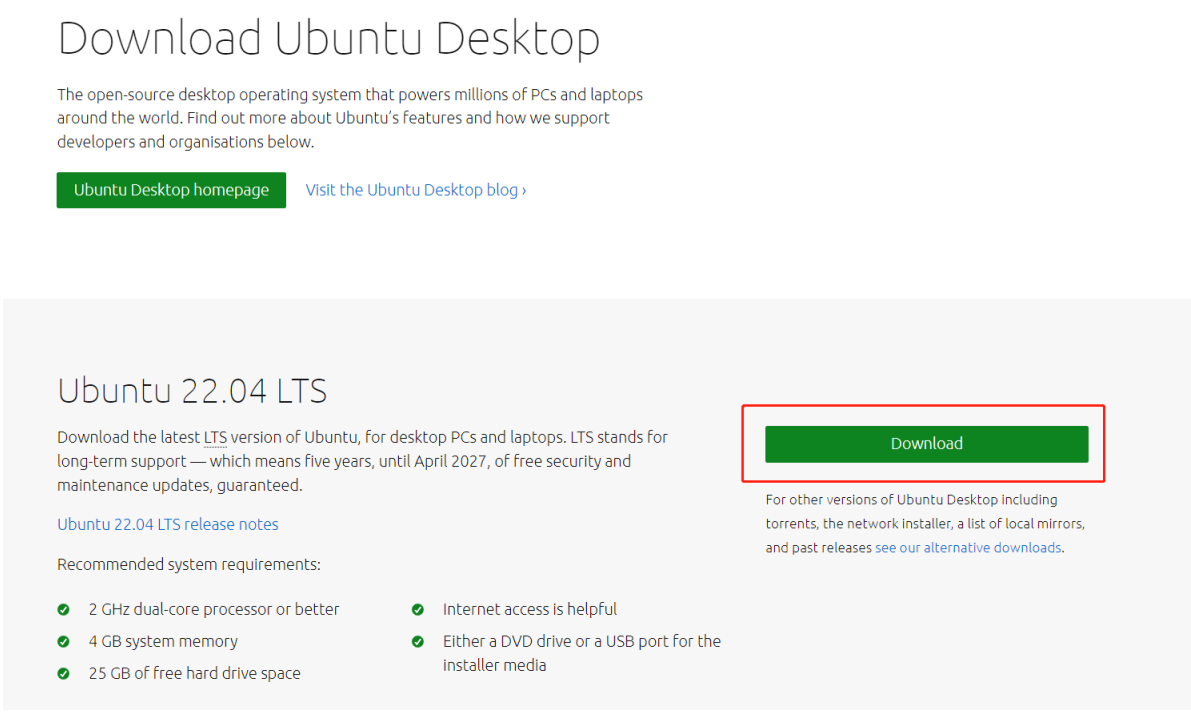
The tutorial to install VirtualBox for both Windows and Mac is here [https://www.wikihow.com/Install-VirtualBox]



2. Download Ubuntu 22.04

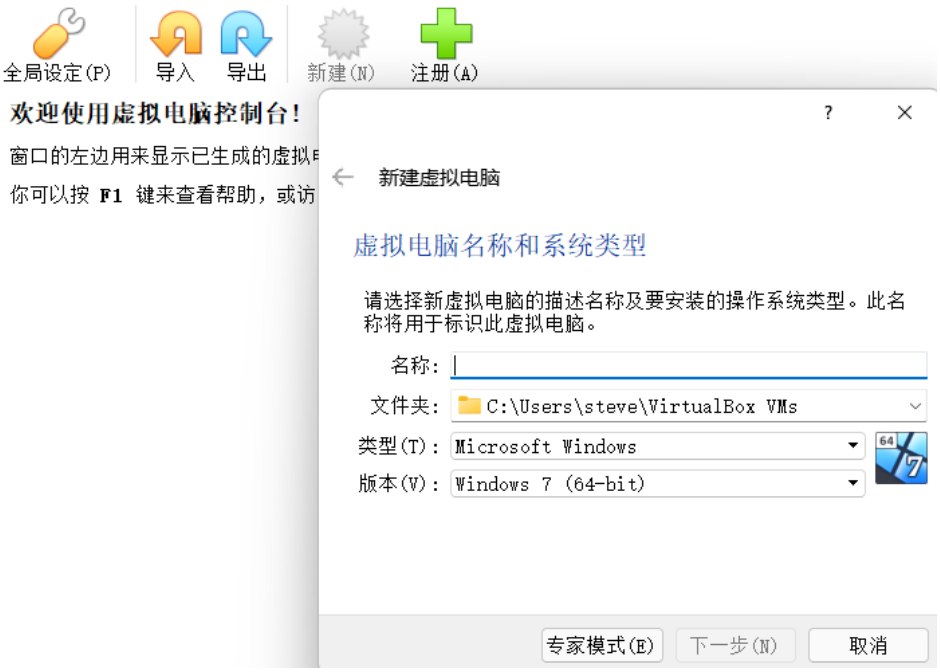
Go to [Download Ubuntu Desktop | Download | Ubuntu] and download.

You can download the Ubuntu disk image (also known as an ISO file) here. The recommended version for VG101 SU2022 is **Ubuntu 22.04.2 LTS**.



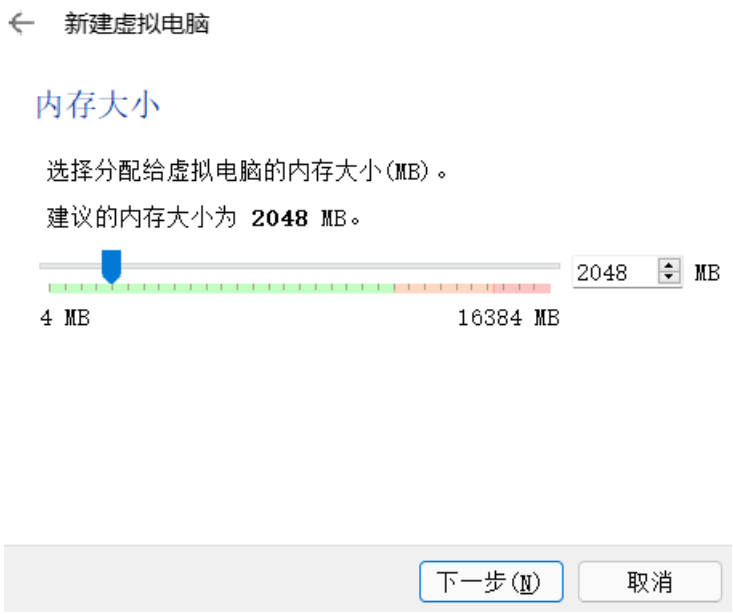
3. Create a Virtual Machine

- **Click "New".** Click the blue badge in the upper-left corner of the VirtualBox window, which opens a pop-up menu.

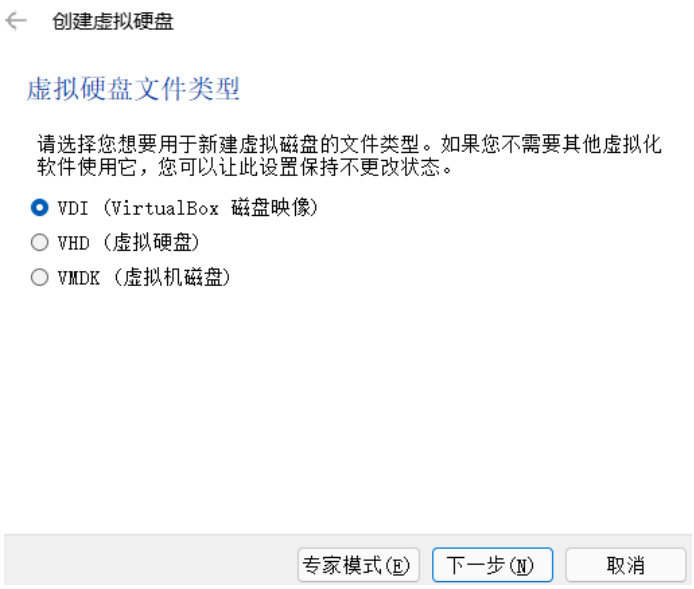


- **Enter a name for your virtual machine.** Type whatever you want to name your virtual machine (e.g., Ubuntu) into the "Name" field.
- **Select Linux as the "Type" value.** Expand the "Type" drop-down menu and select **Linux**.
- **Select Ubuntu as the "Version" value.** Make sure **Ubuntu (64-bit)** is selected in the "Version" drop-down menu. Click **"Next"**.
- **Select an amount of RAM to use.** Drag the slider left or right to decrease or increase the amount of RAM that VirtualBox will have available for your Ubuntu virtual machine.
    - The ideal amount of RAM is automatically selected when you get to this page.

- Make sure not to increase the RAM into the red region; keep the slider in the green region.



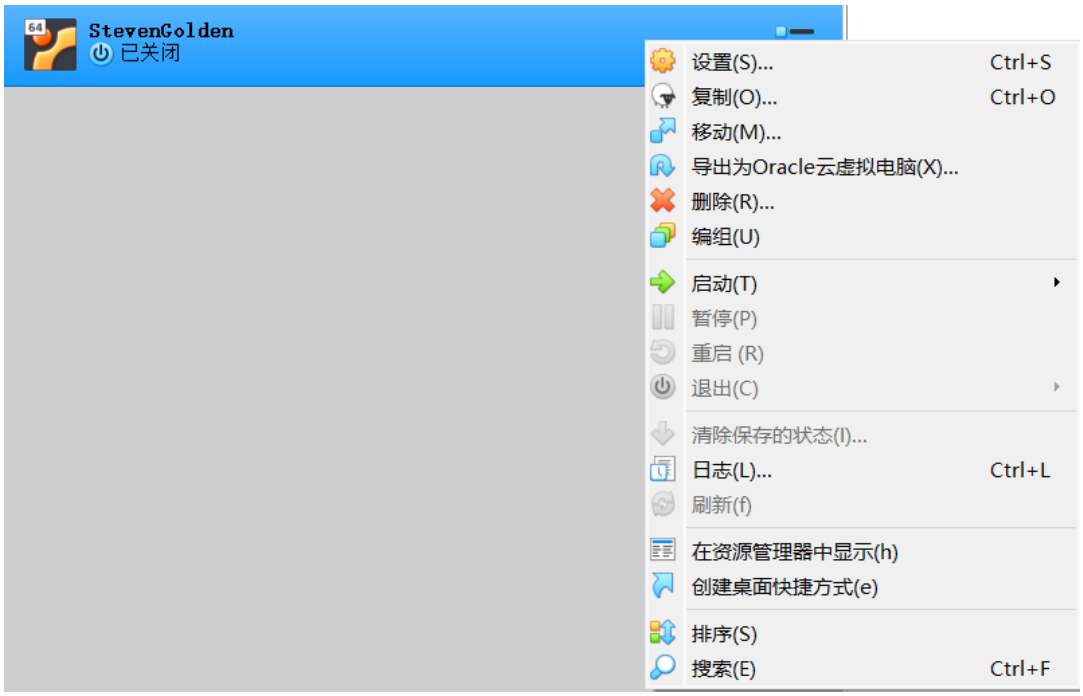
- **Choose the File location and File size**. We will be setting the disk type to VDI and the file size to be 40GB. It depends on the free space on your disk. You may apply the default settings.

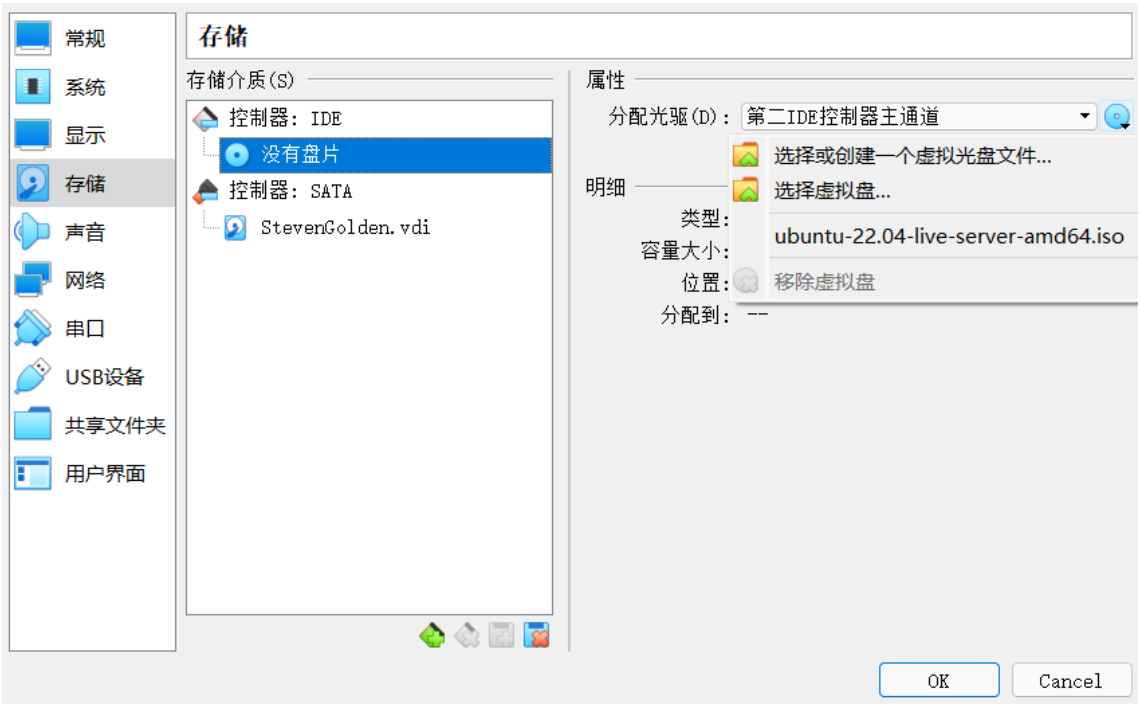


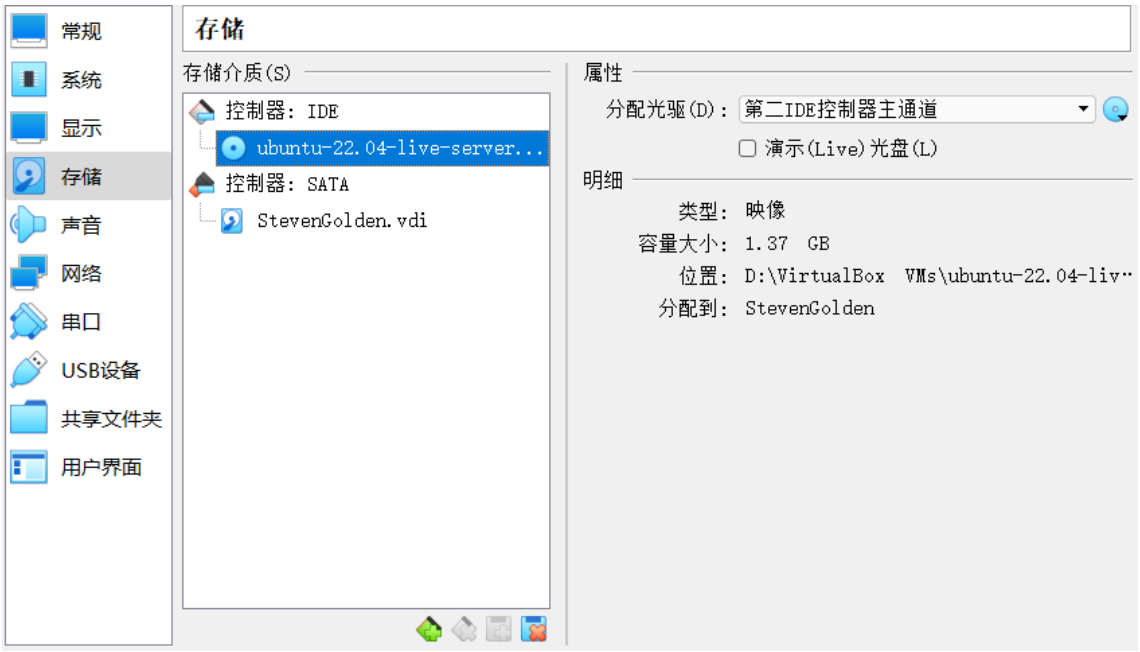
4. Install Ubuntu in VirtualBox

- **Right click the your virtual machine and chick Setting**. Then go Storage and choose Ubuntu ISO.

  (Virtual Box may pop up a message about 'Auto capture keyboard' option. Read the message there and check 'Do not show this message again' option before clicking OK.)



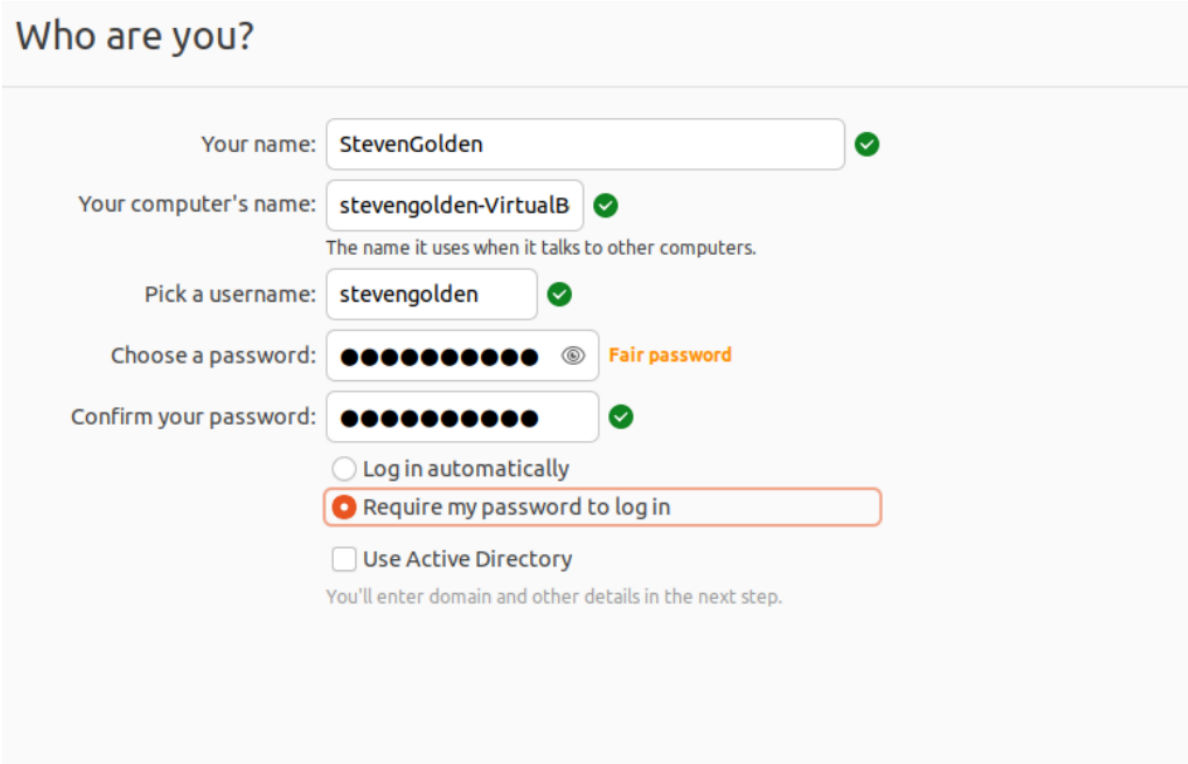




- **Click "Open", then "Start", then "Install Ubuntu"**.
- (If you encounter a black screen at this step. First shut VM and go to Settings -- Display, increased the `Video Memory` to 64MB. Also, change Display > Graphics Controller > "VBoxSVGA". Related discussion: [Ubuntu 18.04/20.04 LTS on Virtualbox boots up, but black login screen - Ask Ubuntu])
- **Check both boxes on the "Preparing to install Ubuntu" page then "Continue".** This will ensure that everything Ubuntu needs to run will be installed.
- **Check the "Erase disk and install Ubuntu" box then "Install Now".** This may sound scary, but don't worry—nothing on your computer will be erased.
- **Click Continue when prompted.** This confirms that you understand the virtual machine's virtual drive will be "erased" (there's nothing on it anyway) and begins the Ubuntu installation process.

5. Setting up Ubuntu

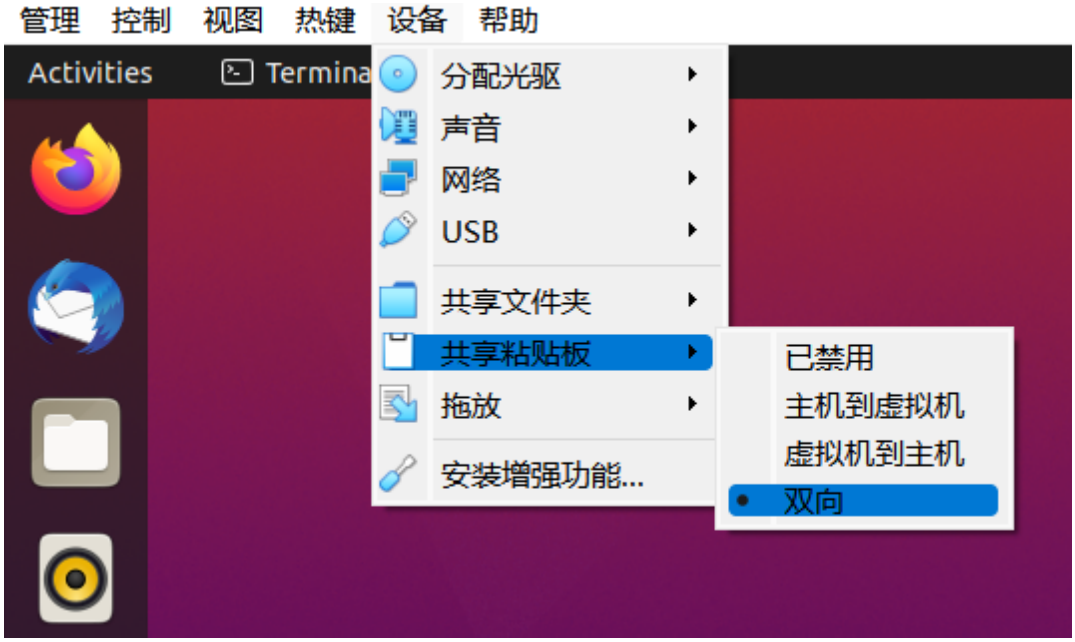
- **Select a time zone then "Continue".** Click a section that correlates with your position on the map. You may choose **"Shanghai"**.
- **Enter your username, computer's name and password**.



- **Wait for Ubuntu to finish installing.** This process may take anywhere from a couple of minutes to half an hour depending on the performance of your computer.
- **Restart the virtual machine and log in**. Remember your password.

6. Enjoy your journey on Linux

- If you find that the screen stays the same size whatever, do the following:
  - Open a terminal by Ctrl+Alt+T
  - type the commands one by one
  - ```
    sudo apt update
    sudo apt update sudo apt install build-essential dkms linux-
    headers-$(uname -r)
    ```
  - Restart Ubuntu.
- You can enable 'Copy and Paste' between Host and Ubuntu.
  - First, go to devices -- Insert Guest Additions CDs.
  - Run the mounted file.
  - Go to device -- Shared Clipboard. Select **Bidirectional**
    ```



  - Reboot Ubuntu

- You can Installing Virtualbox guest additions on Ubuntu. It will optimize your operating system with respect to its performance and usability (install guest additions).
  - Open a terminal by Ctrl+Alt+T
  - Type the two commands one by one

```
sudo add-apt-repository multiverse
sudo apt install virtualbox-guest-dkms virtualbox-guest-x11
```

  - Reboot Ubuntu
  - Confirm the Virtualbox guest additions by typing `lsmod | grep vbox` in a terminal

- If you find that you virtual machine **reacting quite slow**, try the following steps. **If you cannot do it yourself, contact TAs through feishu or email**
  - close ubuntu and enable more memory in Setting -- System.
  - decrease Swappiness rate. Related discussion: Swappiness in Linux (Ubuntu) - How To Change - ShellHacks
    - open a terminal by Ctrl+Alt+T
    - type `sudo gedit /etc/sysctl.conf`, it will open a file
    - add a line in the file: `vm.swappiness=10`
    - save and close the file
    - type in terminal: `sudo sysctl -p`

Reference

tutorials/ubuntu_installation_virtualbox.md at master · ve280/tutorials (github.com)

Install Ubuntu on Oracle VirtualBox (nih.gov)

How to Install Ubuntu 22.04 LTS on VirtualBox in Windows 11 - YouTube