

Software Installation

BLG413E - System Programming, Practice Session 1

Different Ways of Installing Linux

Installing on hard drive:

- Linux distribution is installed on PC's harddisk.
- High performance usage.
- Installation alongside with another Operating System (such as Windows).
 - <https://help.ubuntu.com/community/WindowsDualBoot>

Different Ways of Installing Linux

Installing on a usb flash drive:

- Linux distribution is installed on a usb flash drive using a tool such as Universal USB installer
 - <http://www.pendrivelinux.com/universal-usb-installer-easy-as-1-2-3/>

Different Ways of Installing Linux

- Installing on a virtual machine:

- Linux distribution is installed on a virtual machine in another Operating System (such as Windows).
- Virtualization tools such as VirtualBox are used for this purpose.

Operating System Used in This Course

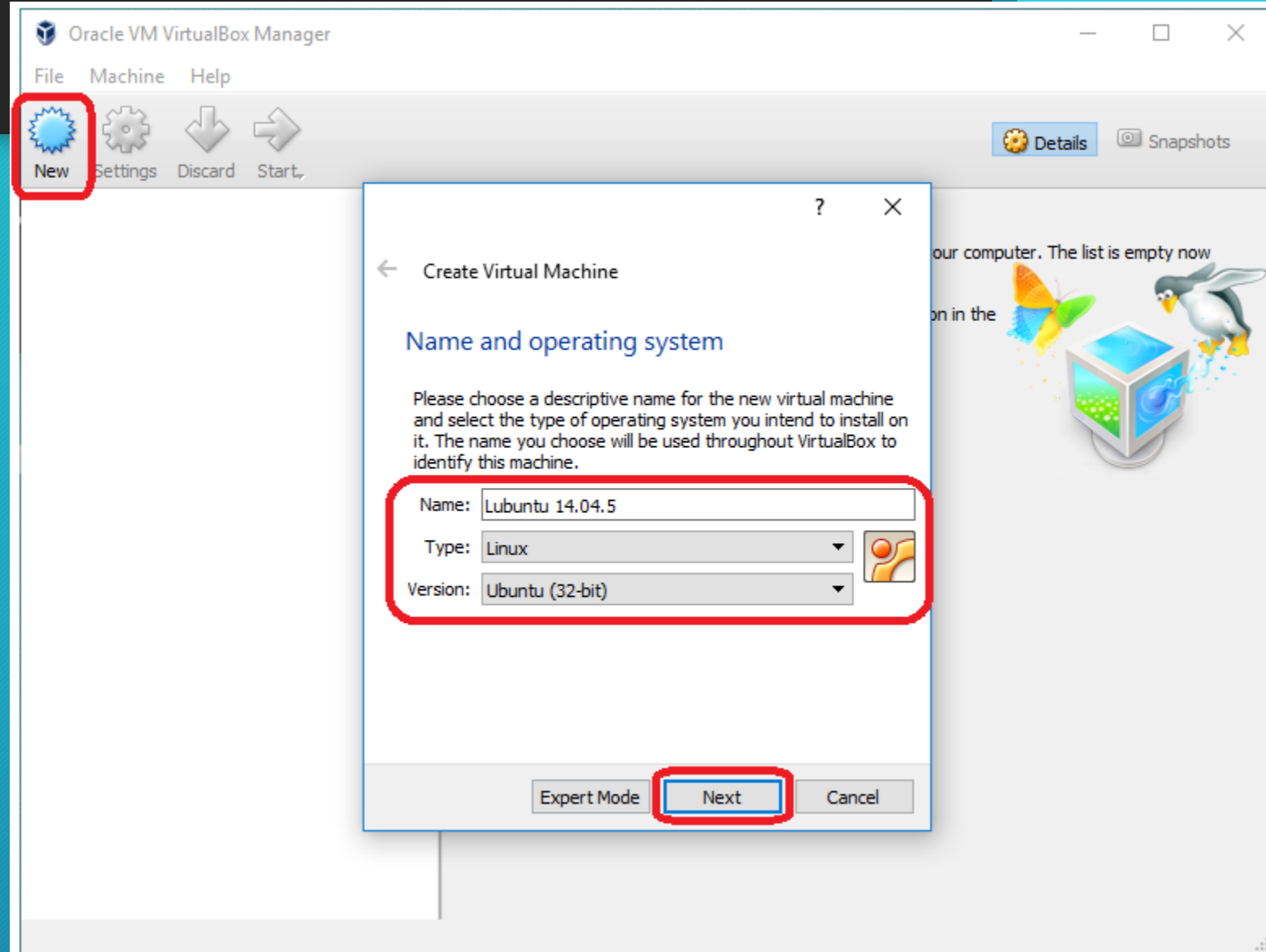
- Course material was tested on Lubuntu 14.04.5 LTS “Trusty Tahr” release, 32 bit version. Although most of the practical information in the material can be applied to any Ubuntu-based system, you might encounter problems when working on a different version.

Installing Lubuntu using VirtualBox

1. Download and install VirtualBox compatible with the operating system you use (Windows, Mac OS etc.):
 - <https://www.virtualbox.org/wiki/Downloads>
2. Download Lubuntu 14.04.5 LTS (Trusty Tahr) 32-bit PC (i386) desktop image:
 - <http://cdimage.ubuntu.com/lubuntu/releases/14.04.5/release/>

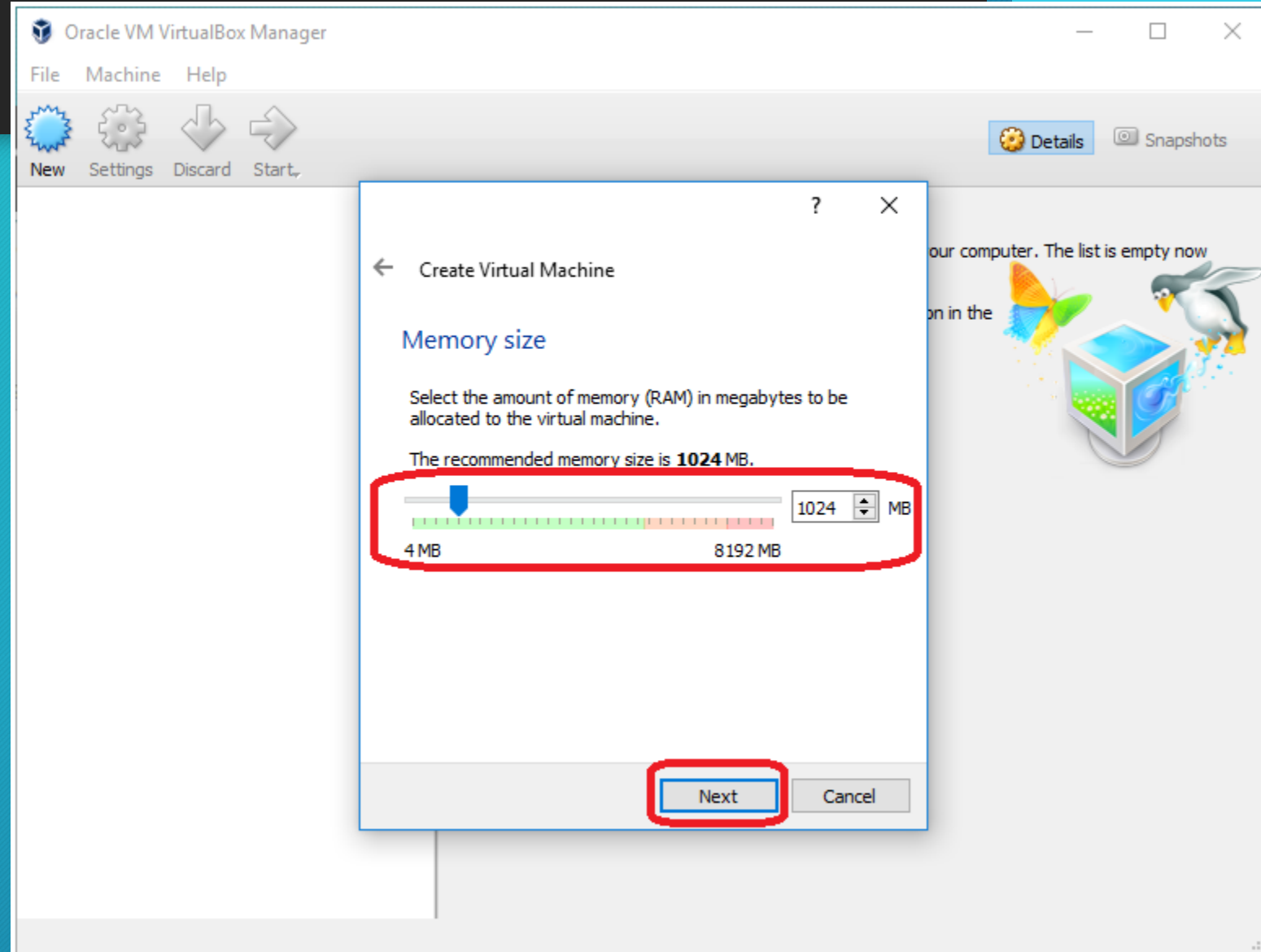
Installing Lubuntu using VirtualBox

3. Create a virtual machine using VirtualBox



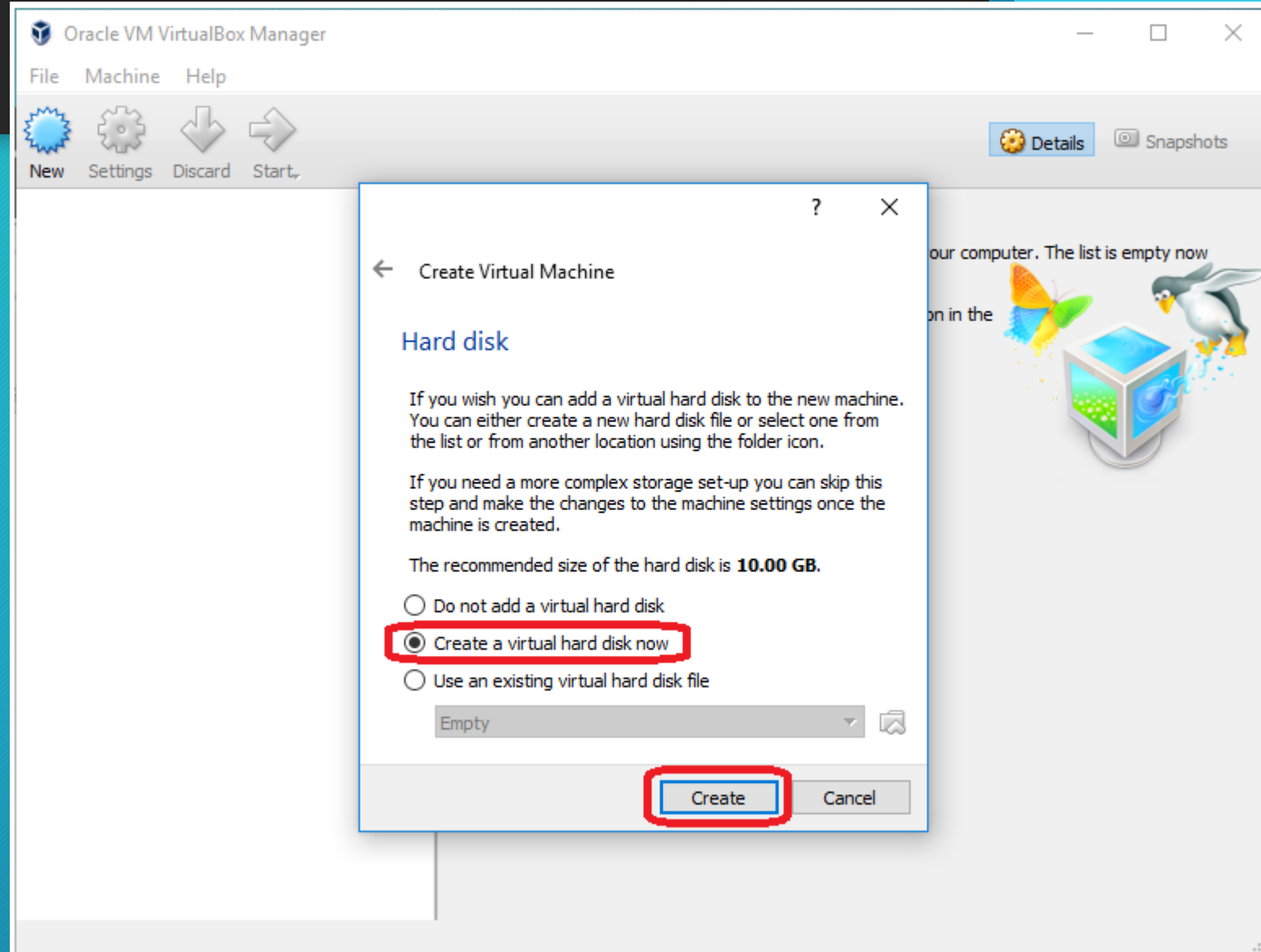
Installing Ubuntu using VirtualBox

3. Create a virtual machine using VirtualBox



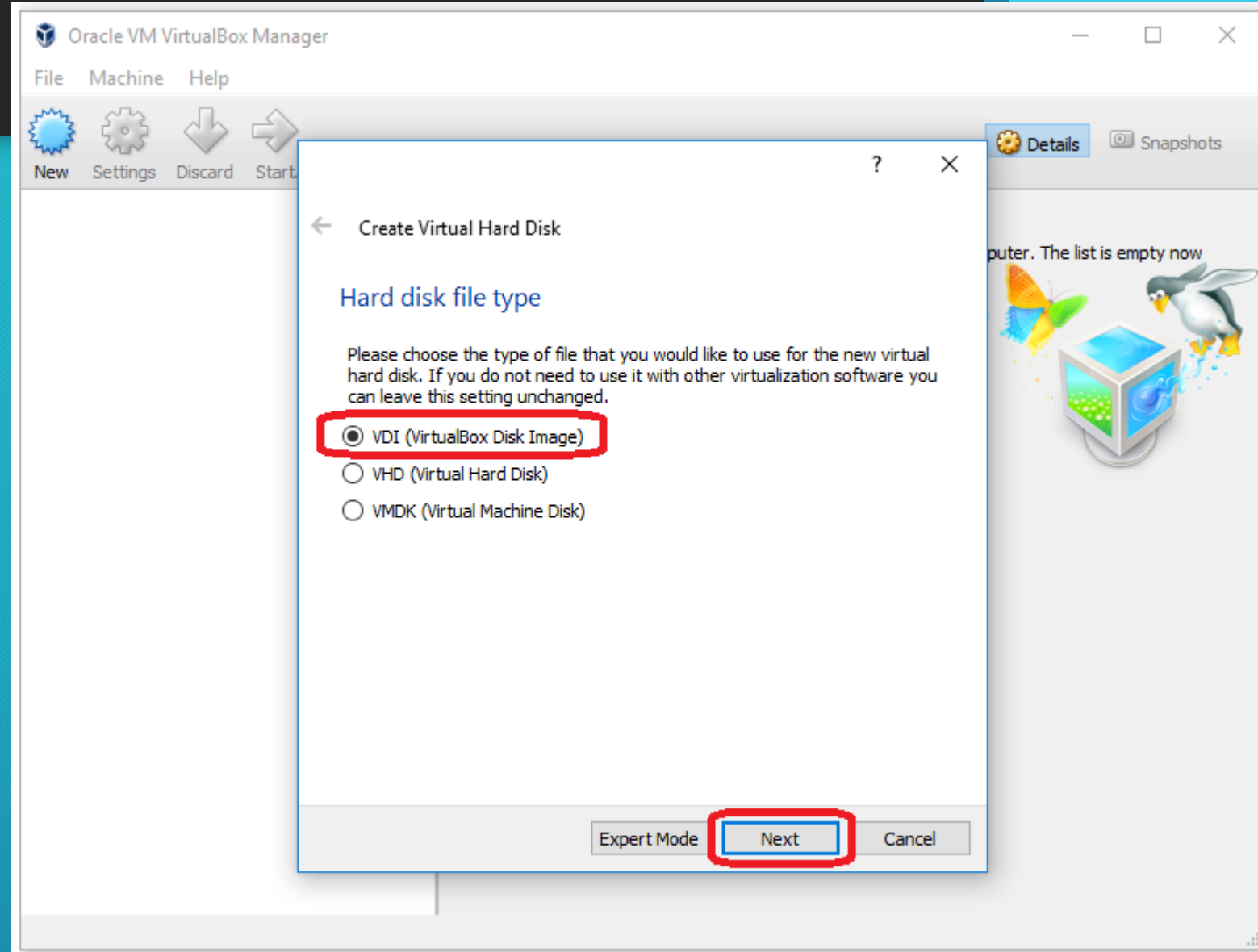
Installing Lubuntu using VirtualBox

3. Create a virtual machine using VirtualBox



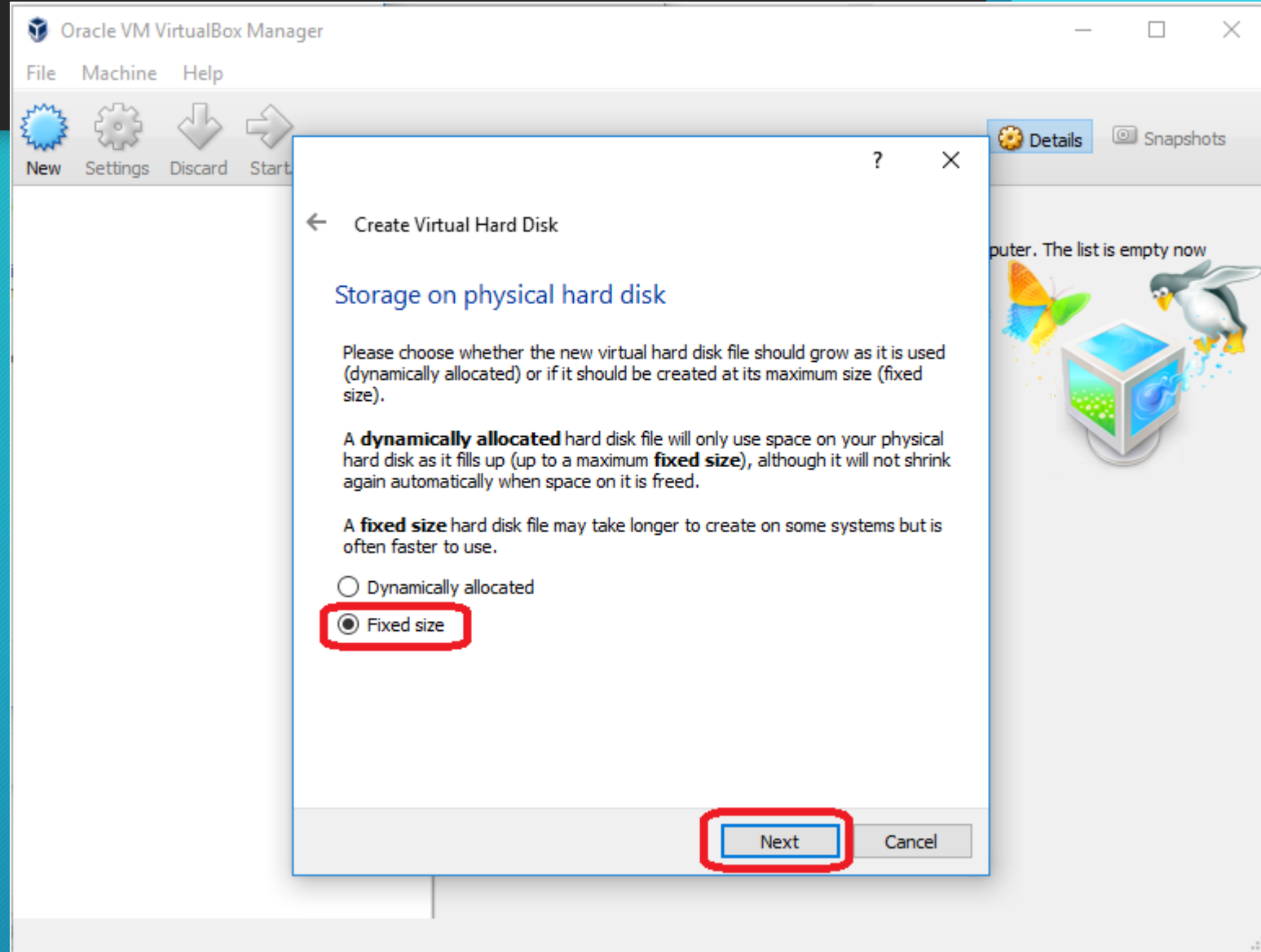
Installing Ubuntu using VirtualBox

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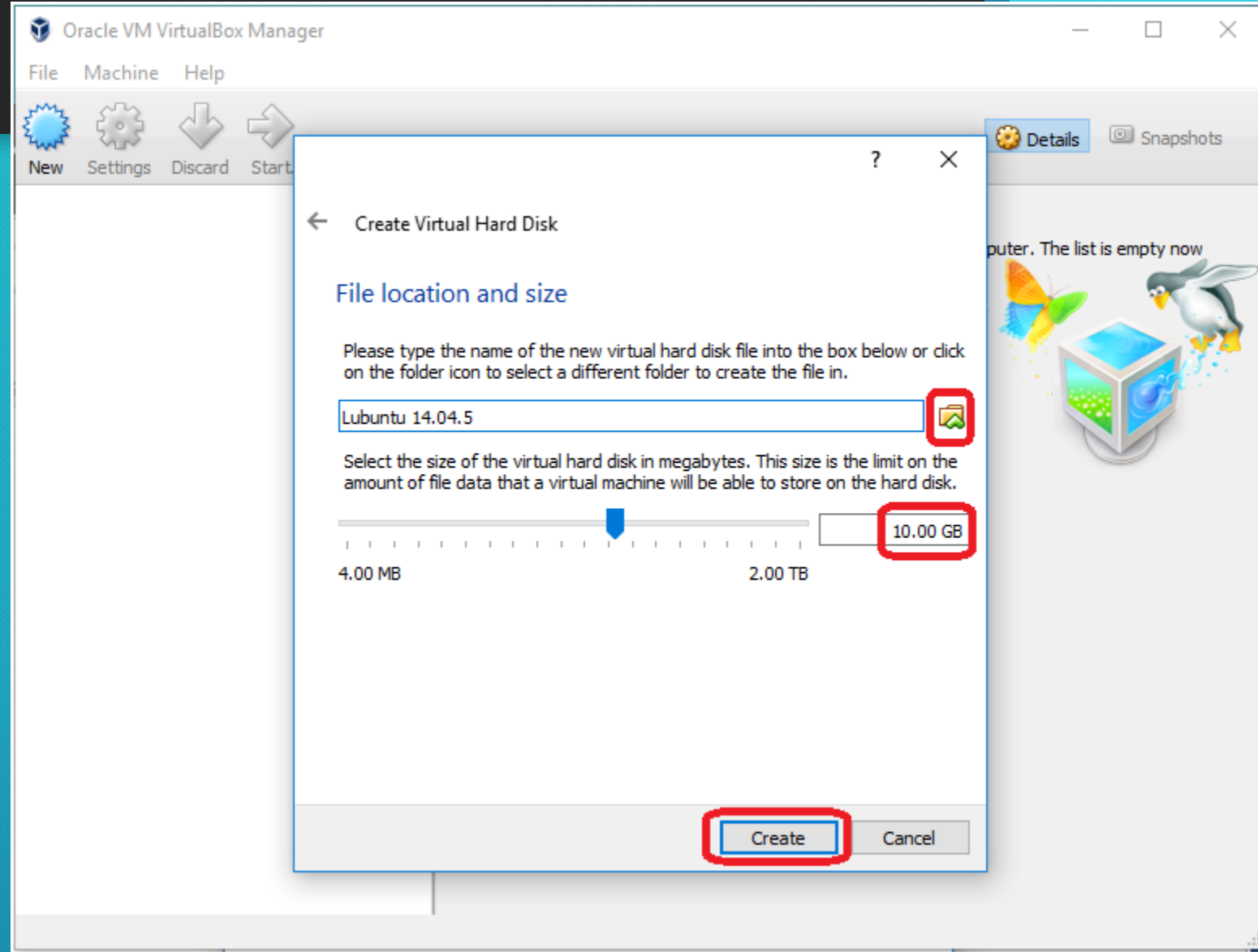
Installing Ubuntu using VirtualBox

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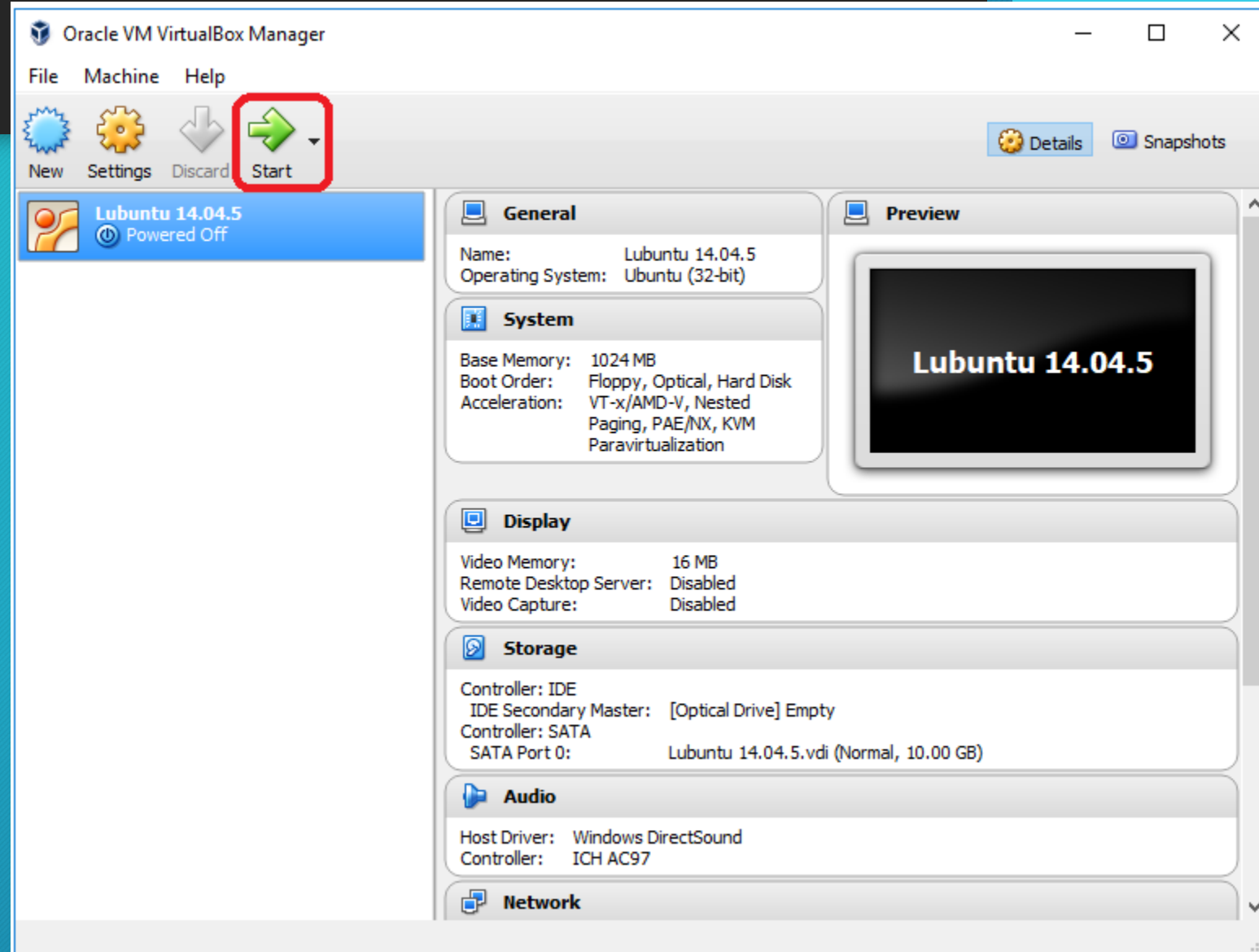
Installing Ubuntu using VirtualBox

3. Create a virtual machine using VirtualBox

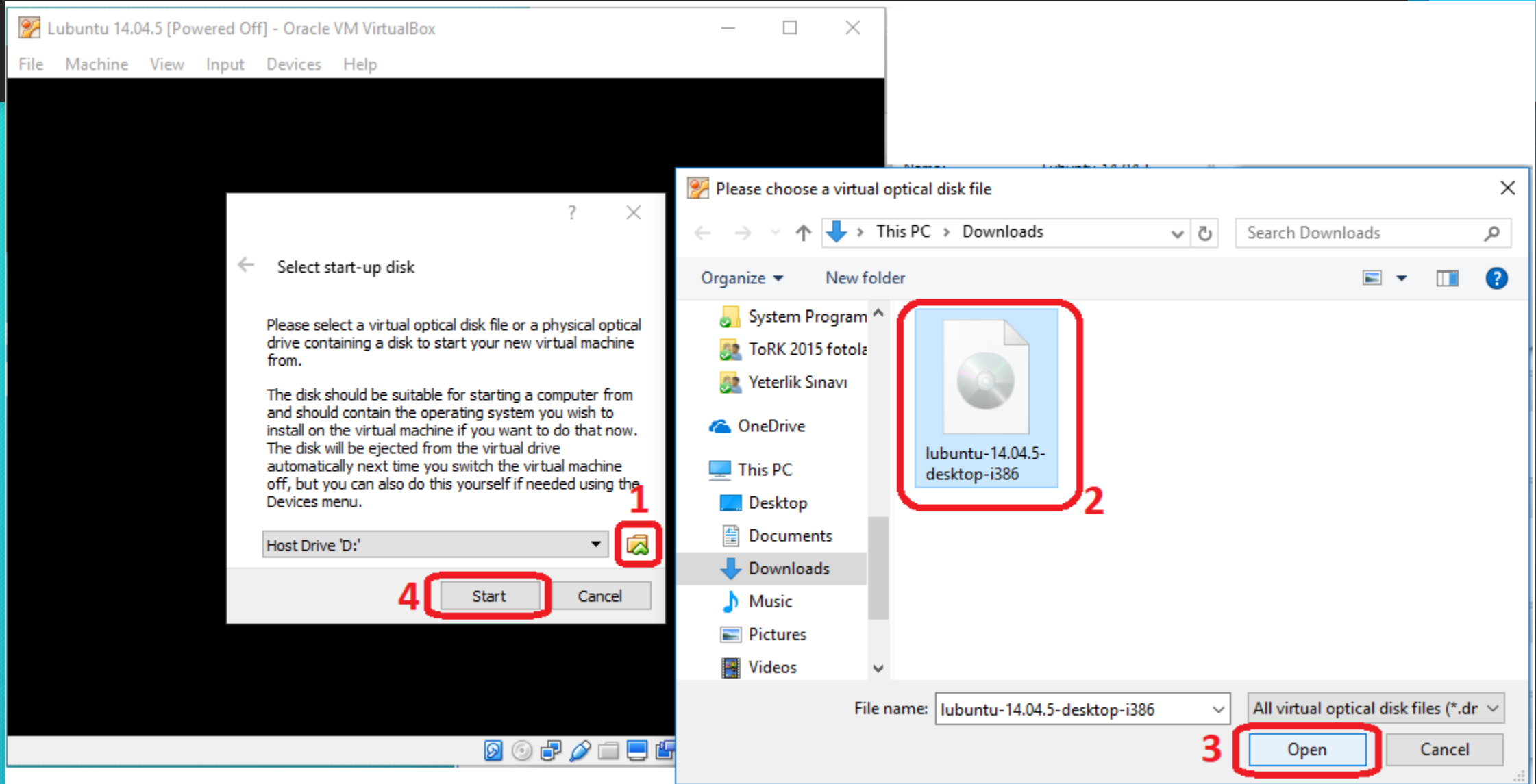


Installing Lubuntu using VirtualBox

4. Install Lubuntu on virtual machine

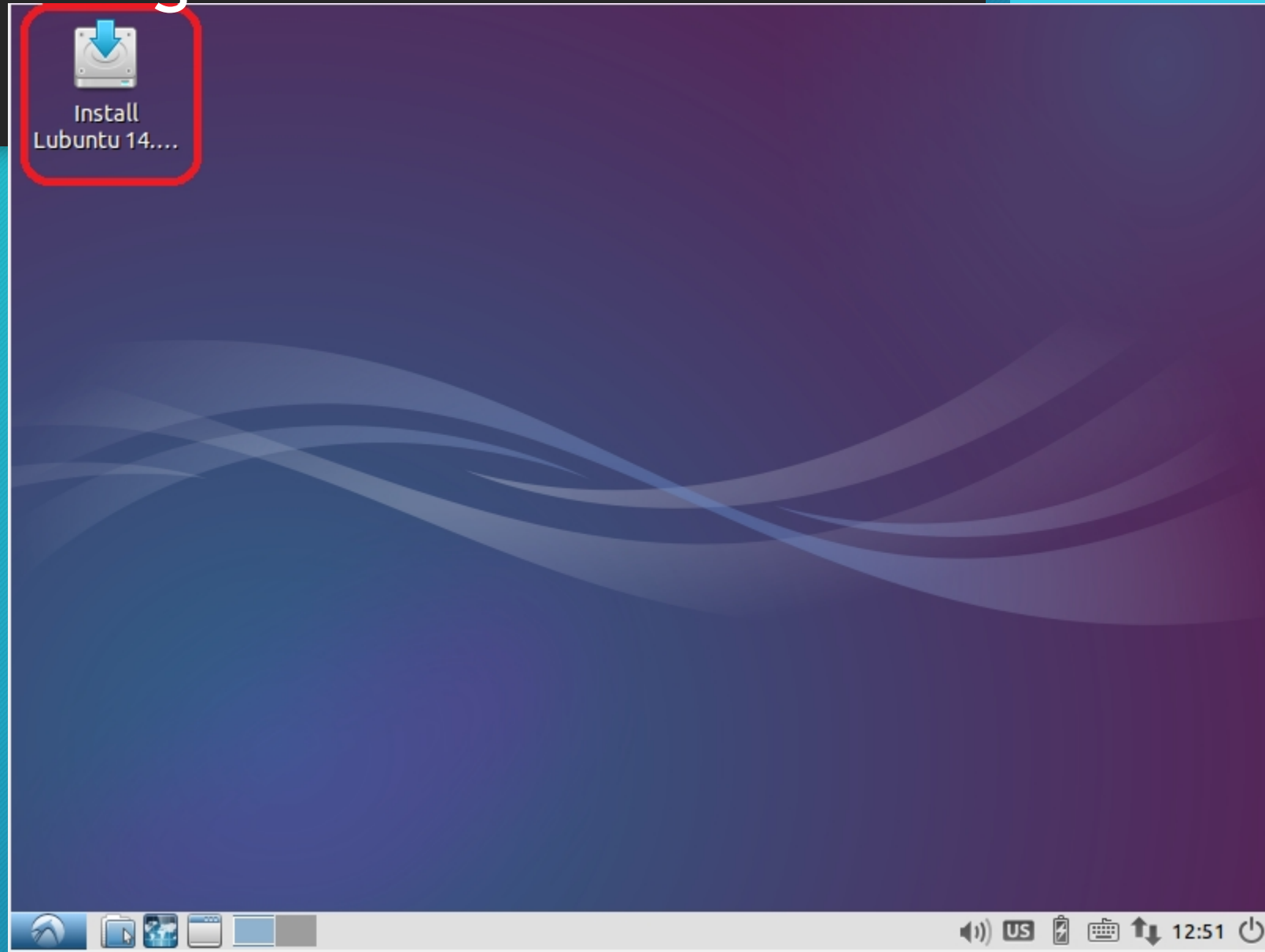


Installing Lubuntu using VirtualBox



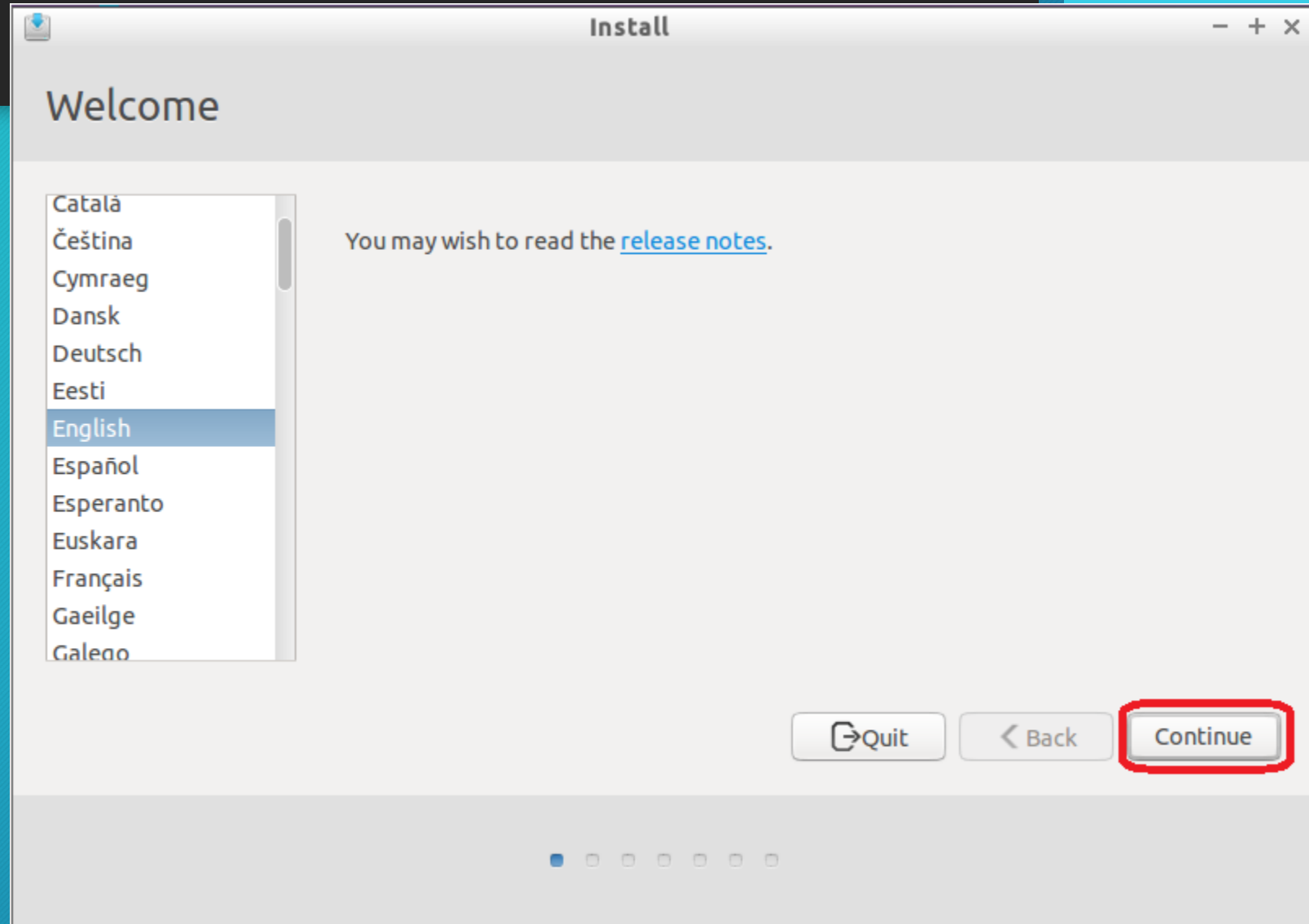
Installing Lubuntu using VirtualBox

4. Install Lubuntu on virtual machine



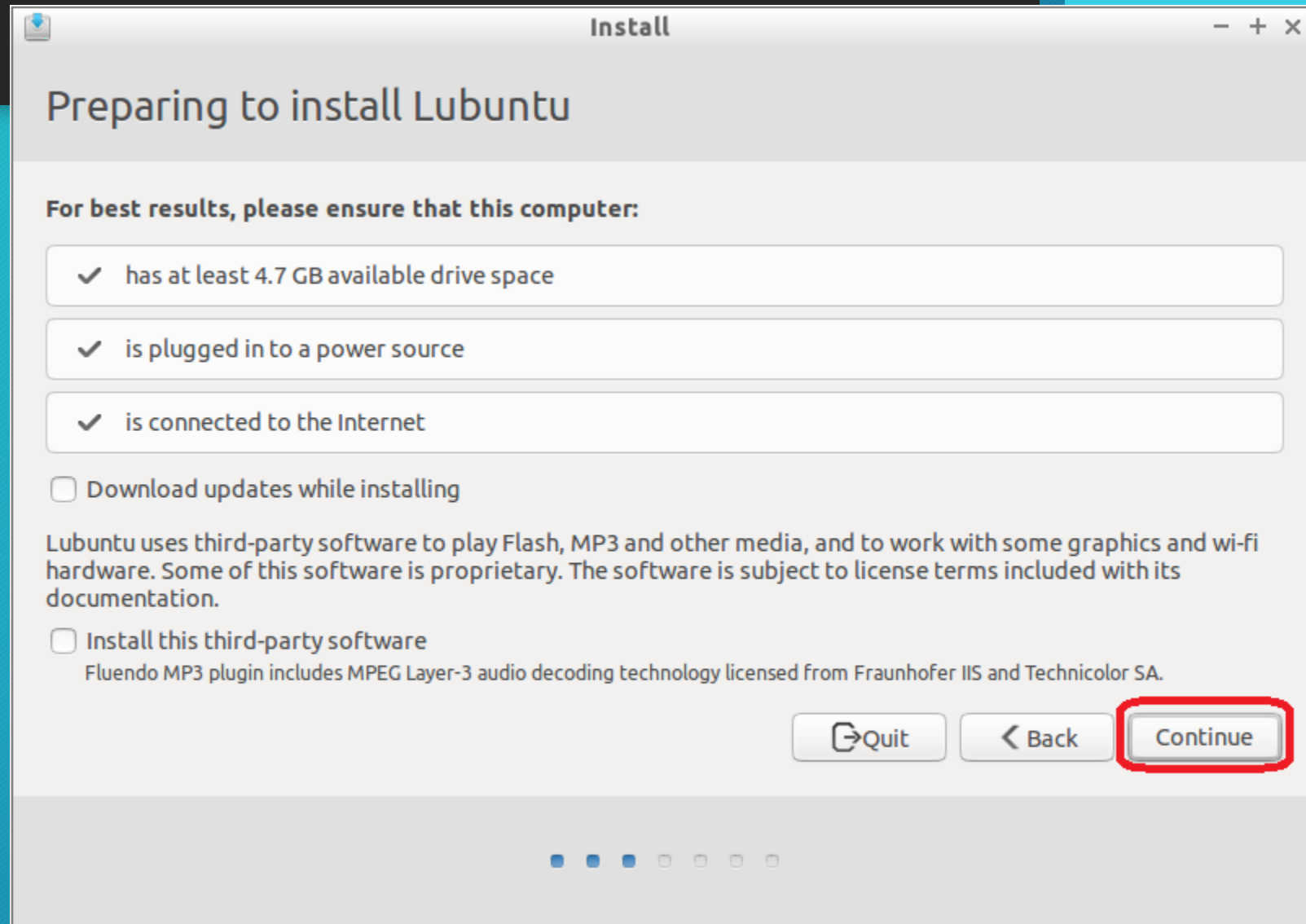
Installing Ubuntu using VirtualBox

4. Install Ubuntu on virtual machine



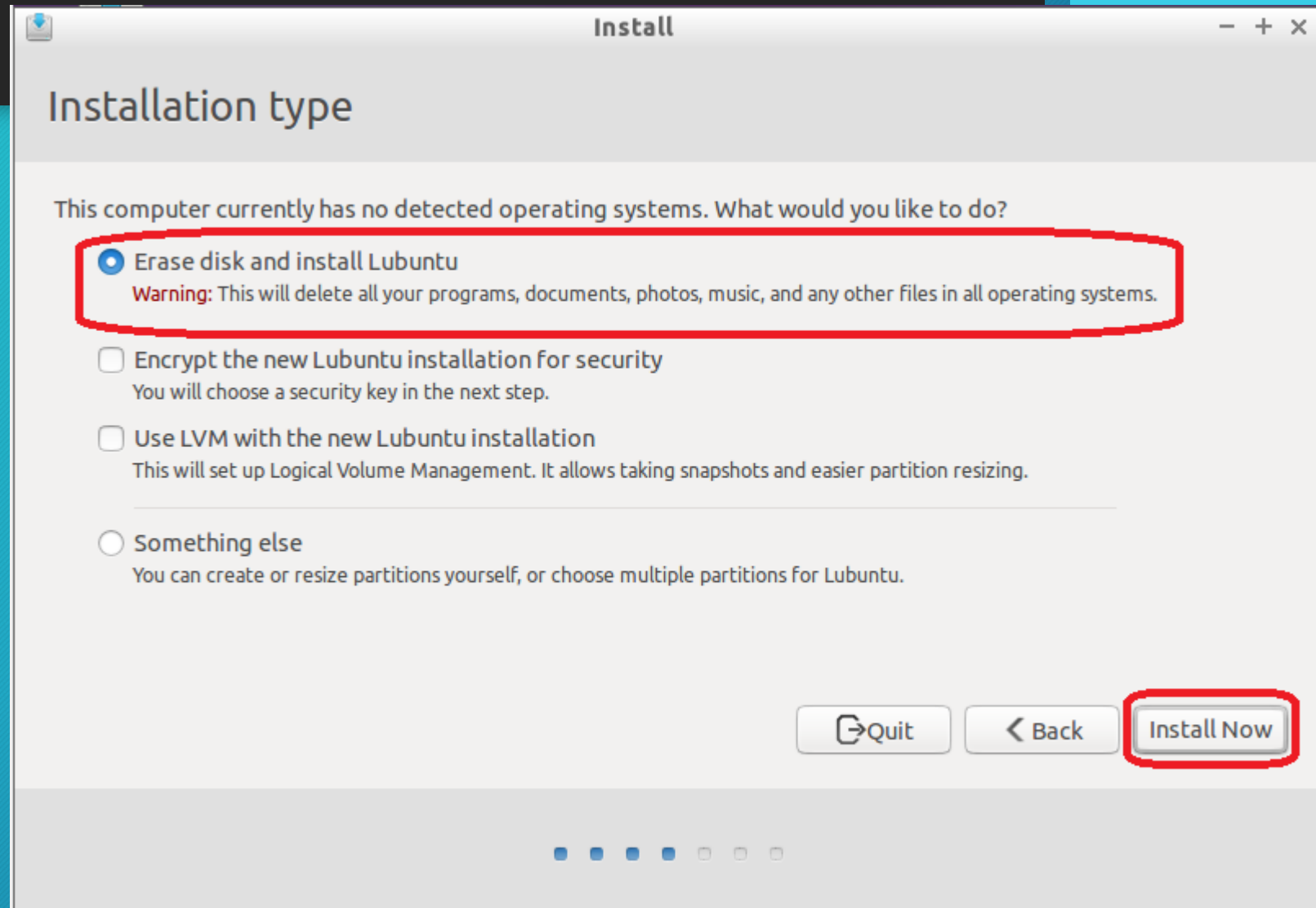
Installing Lubuntu using VirtualBox

4. Install Lubuntu on virtual machine



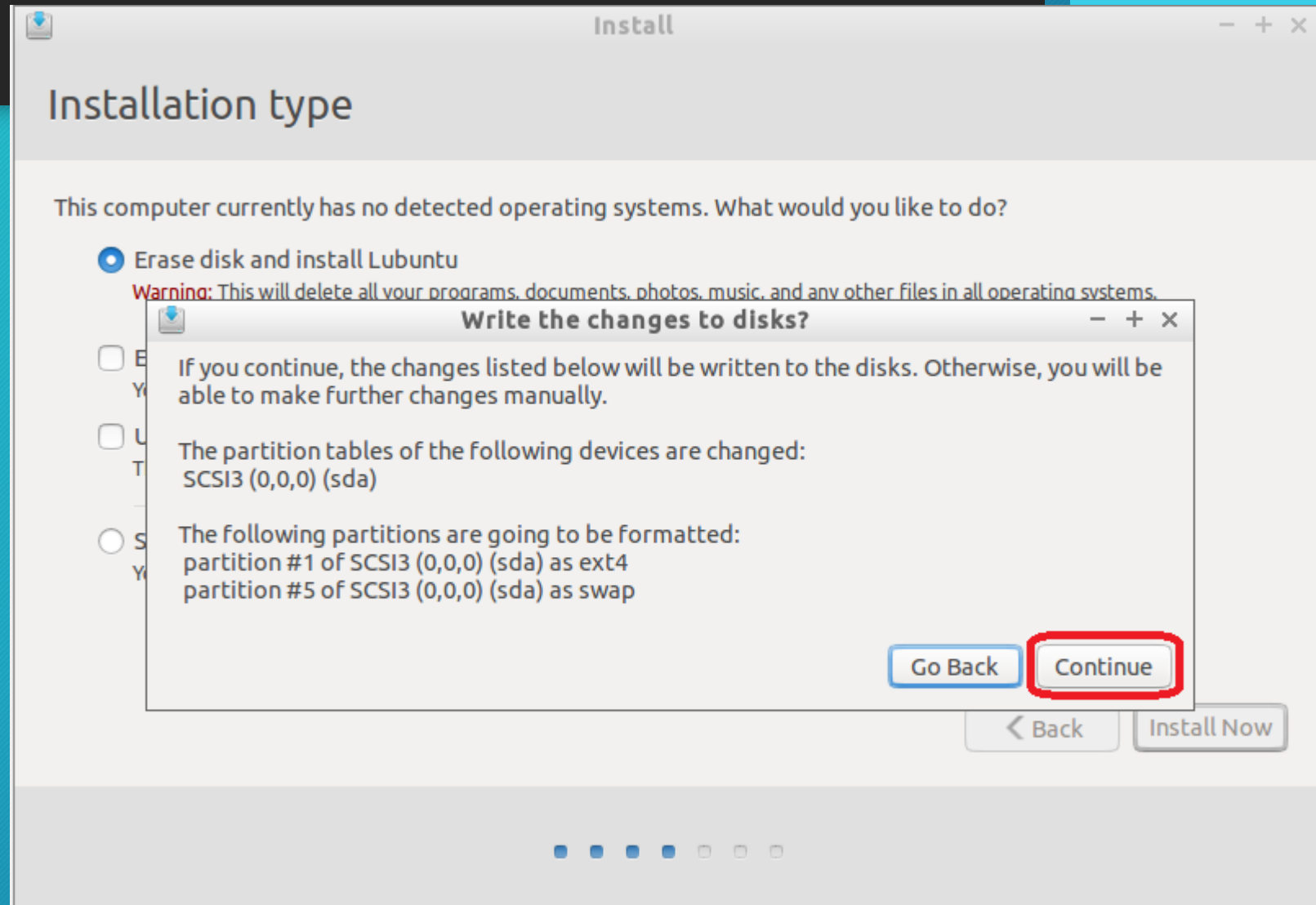
Installing Ubuntu using VirtualBox

4. Install Ubuntu on virtual machine



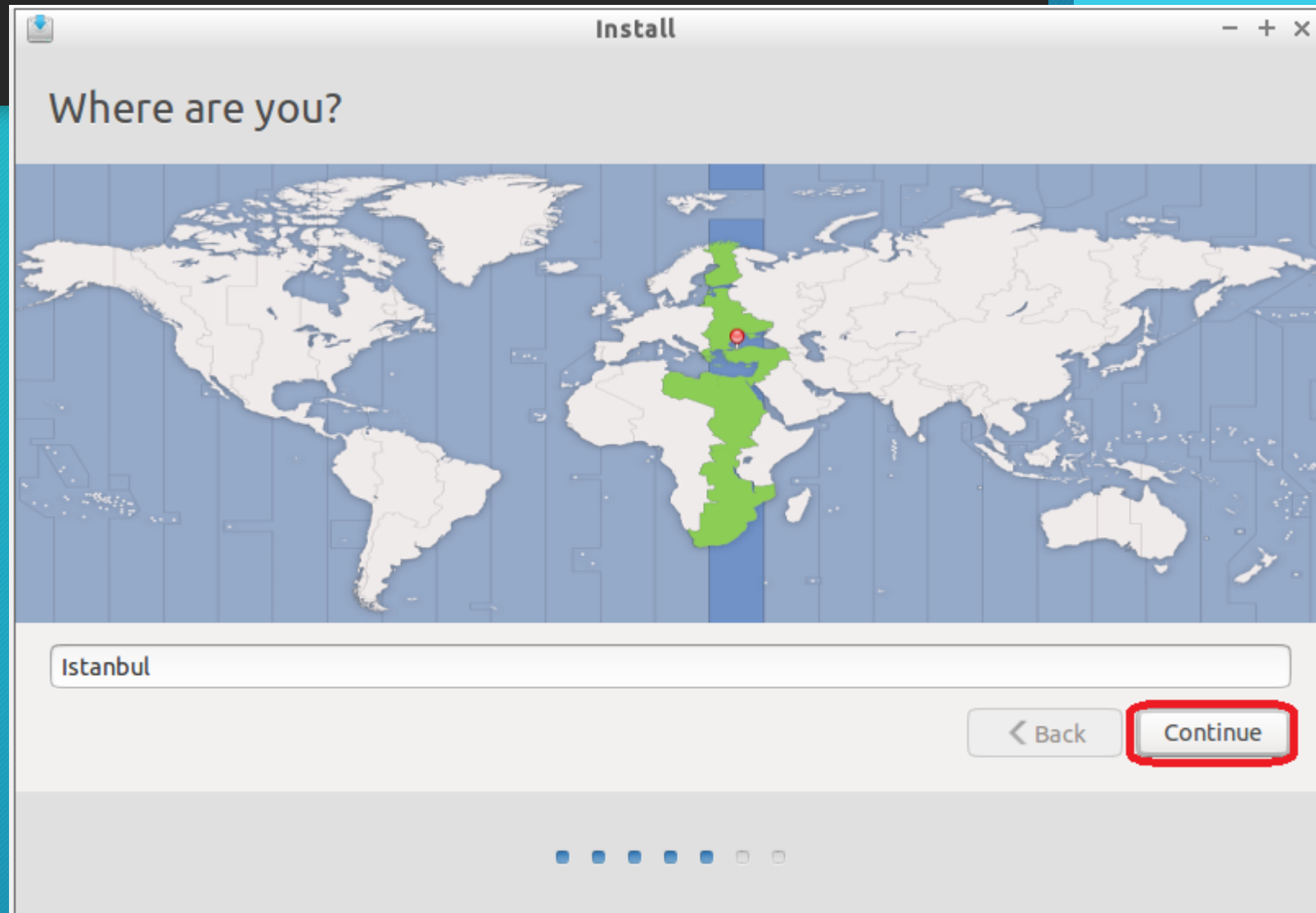
Installing Ubuntu using VirtualBox

4. Install Ubuntu on virtual machine



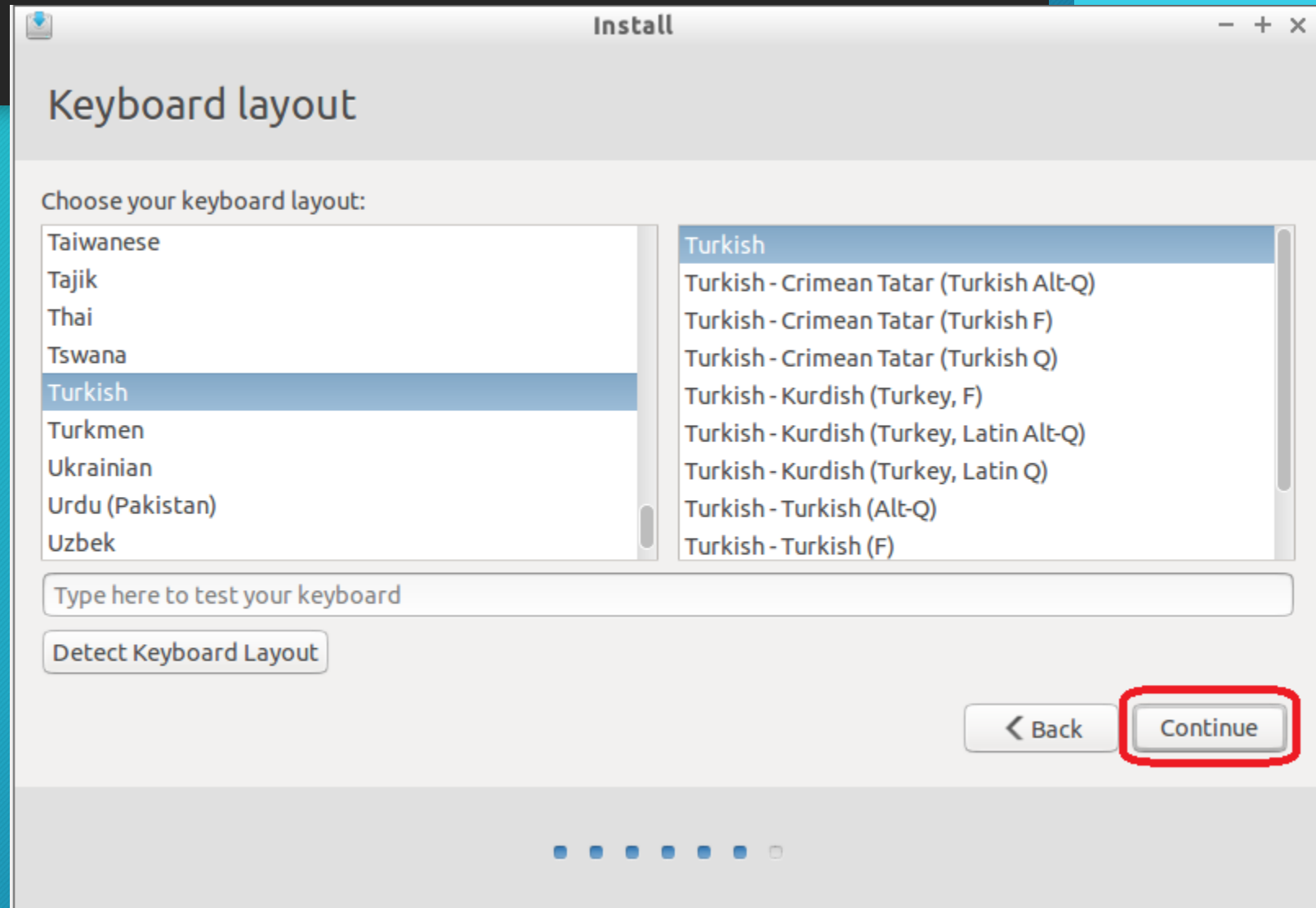
Installing Ubuntu using VirtualBox

4. Install Ubuntu on virtual machine



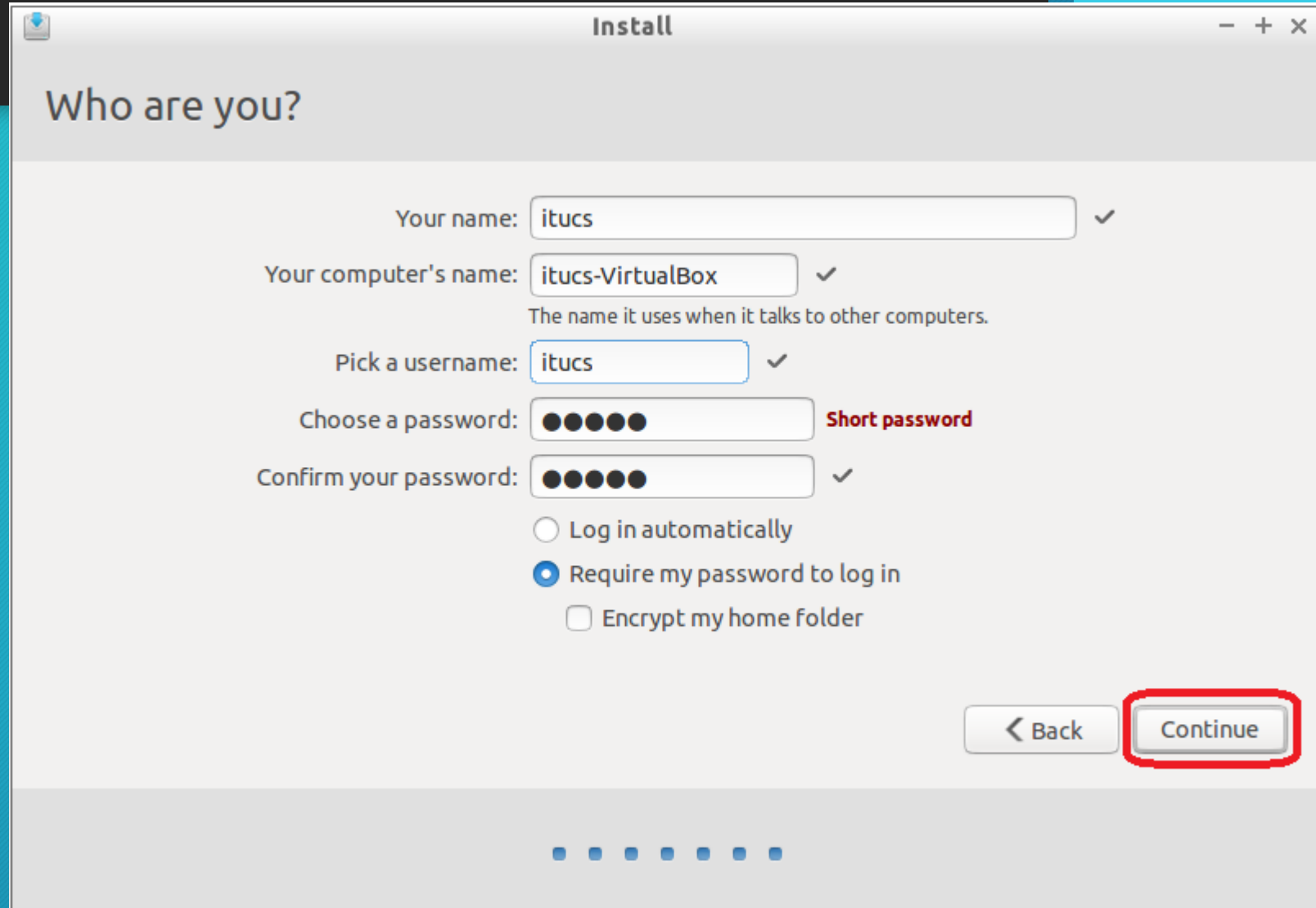
Installing Ubuntu using VirtualBox

4. Install Ubuntu on virtual machine



Installing Ubuntu using VirtualBox

4. Install Ubuntu on virtual machine



The screenshot shows the 'Install' window for Ubuntu, specifically the 'Who are you?' screen. The window has a title bar with standard window controls. The main content area includes the following fields and options:

- Your name:** A text box containing 'itucs' with a checkmark to its right.
- Your computer's name:** A text box containing 'itucs-VirtualBox' with a checkmark to its right. Below this is the text 'The name it uses when it talks to other computers.'
- Pick a username:** A text box containing 'itucs' with a checkmark to its right.
- Choose a password:** A password box with six dots. To its right is the text 'Short password' in red.
- Confirm your password:** A password box with six dots and a checkmark to its right.
- Login options:** Three radio buttons:
 - ☐ Log in automatically
 - ☒ Require my password to log in
 - ☐ Encrypt my home folder

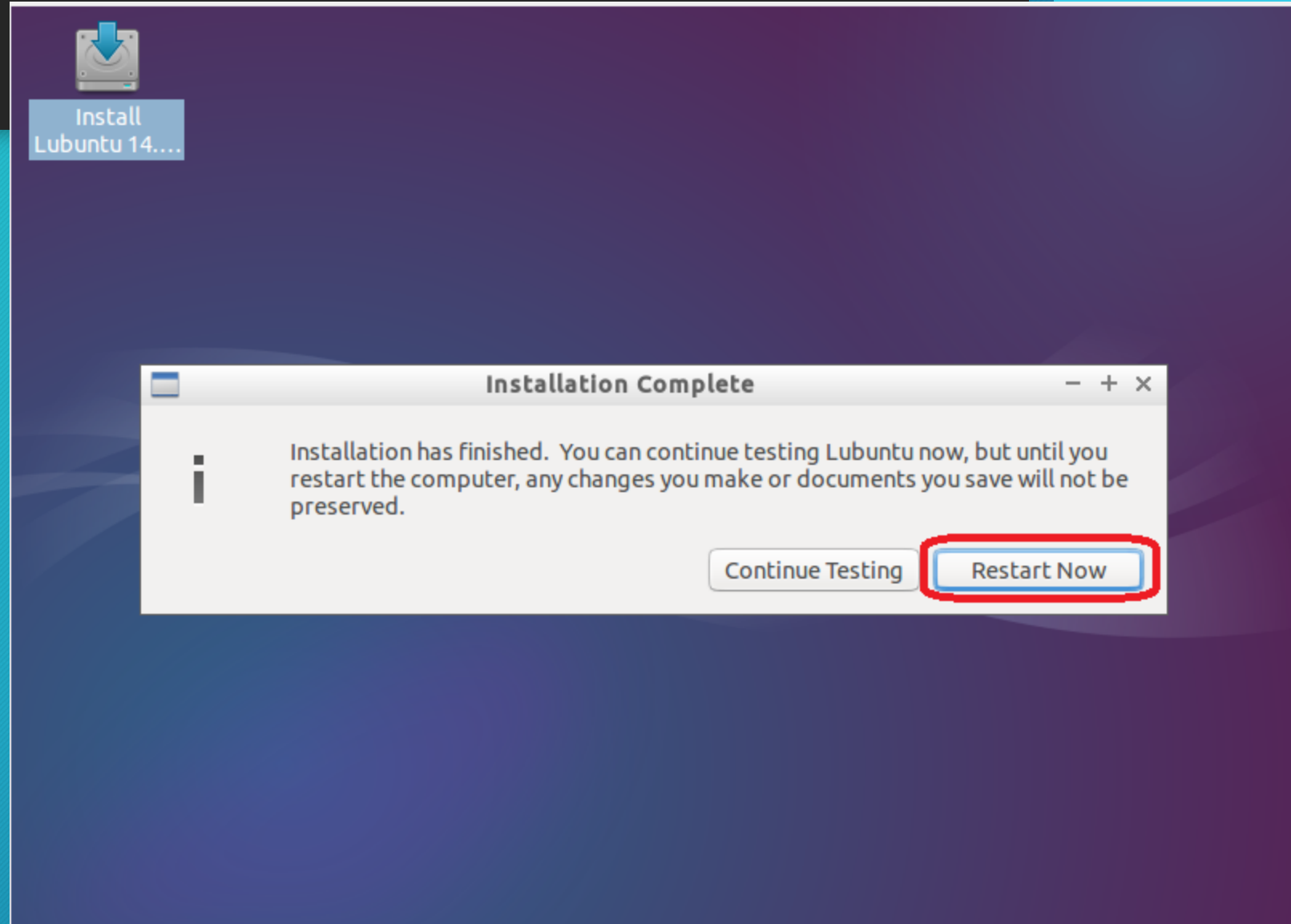
At the bottom right, there are two buttons: '< Back' and 'Continue'. The 'Continue' button is highlighted with a red rectangle. At the very bottom of the window, there is a progress bar consisting of seven small blue squares.

Installing Lubuntu using VirtualBox

4. Install Lubuntu on virtual machine
 - Wait until the installation is complete

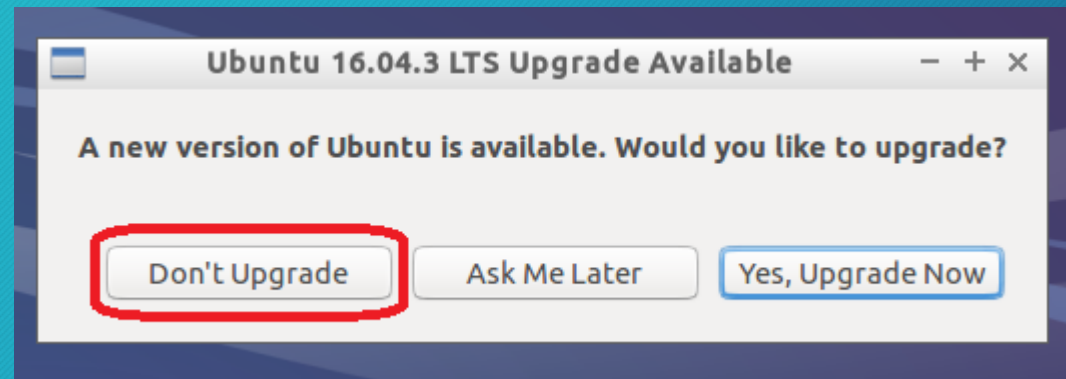
Installing Lubuntu using VirtualBox

4. Install Lubuntu on virtual machine



Installing Lubuntu using VirtualBox

4. Install Lubuntu on virtual machine



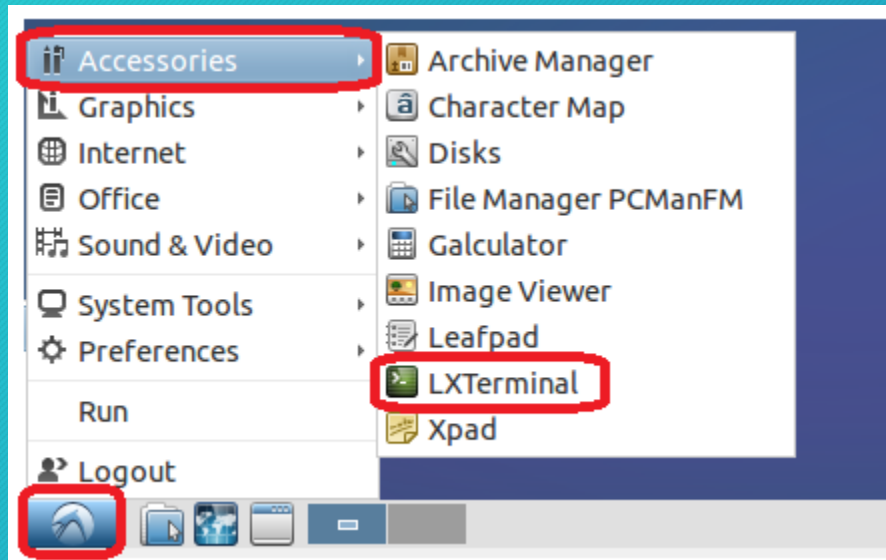
Installing Lubuntu using VirtualBox

5. Install required software for the course:

- manpages-dev
- g++
- patch
- strace
- ltrace
- linux-headers-\$(uname -r)
- linux-source
- kernel-package
- fakeroot
- libncurses5-dev
- libfuse-dev

Installing Lubuntu using VirtualBox

5. Install required software for the course:
- Open terminal



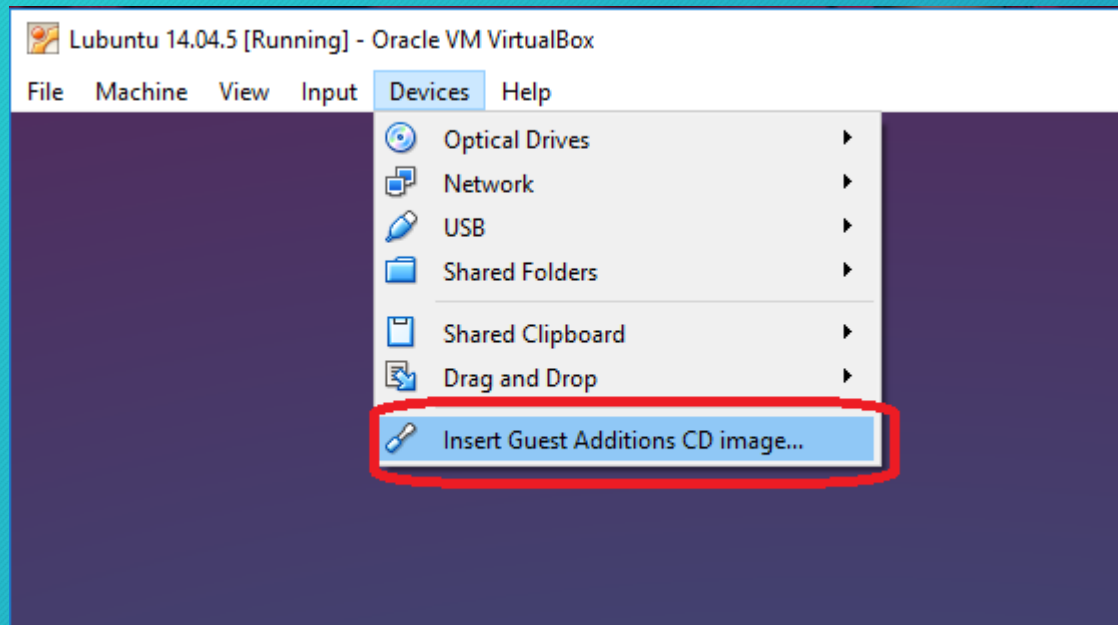
Installing Lubuntu using VirtualBox

5. Install required software for the course:

- Update package lists
 - `sudo apt-get update`
- Install required packages
 - `sudo apt-get install manpages-dev g++ patch strace ltrace linux-headers-$(uname -r) linux-source kernel-package fakeroot libncurses5-dev libfuse-dev`
- Install a code editor
 - `sudo apt-get install geany`

Installing VirtualBox Guest Additions

- Guest additions are necessary to be able to share files between your host operating system and virtual operating system.



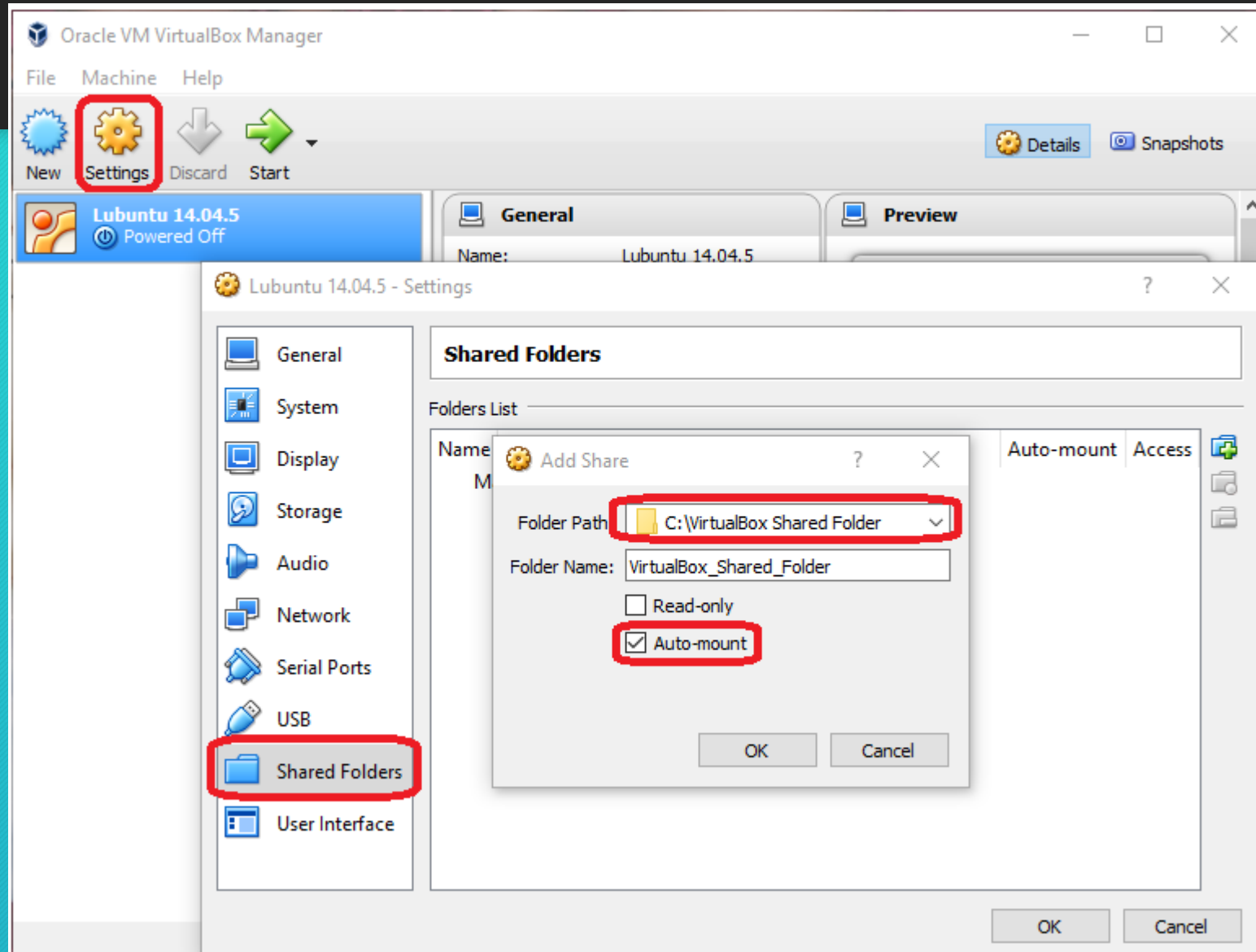
Installing VirtualBox Guest Additions

```
itucs@itucs-VirtualBox: /media/itucs/VBOXADDITIONS_5.1.26_117224
File Edit Tabs Help
itucs@itucs-VirtualBox:~$ cd /media/itucs/VBOXADDITIONS_5.1.26_117224/
itucs@itucs-VirtualBox:/media/itucs/VBOXADDITIONS_5.1.26_117224$ sudo sh ./VBoxLinuxAdditions.run
[sudo] password for itucs:
Verifying archive integrity... All good.
Uncompressing VirtualBox 5.1.26 Guest Additions for Linux.....
VirtualBox Guest Additions installer
Copying additional installer modules ...
Installing additional modules ...
vboxadd.sh: Starting the VirtualBox Guest Additions.

You may need to restart the Window System (or just restart the guest system)
to enable the Guest Additions.

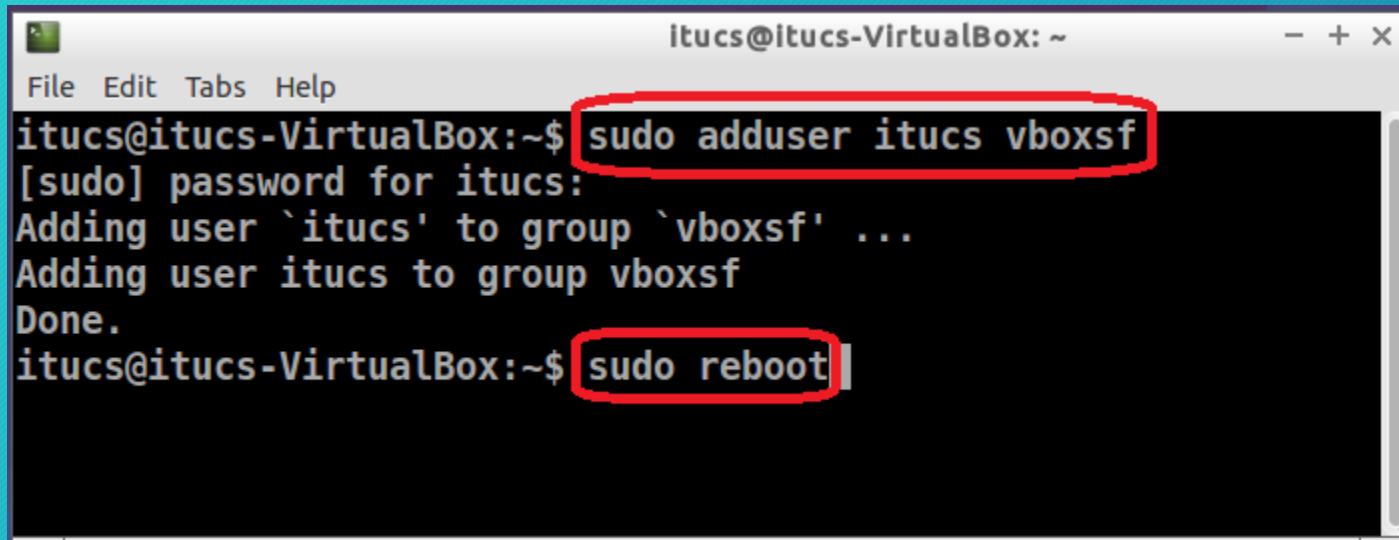
itucs@itucs-VirtualBox:/media/itucs/VBOXADDITIONS_5.1.26_117224$ sudo reboot
```


Creating a Shared Folder



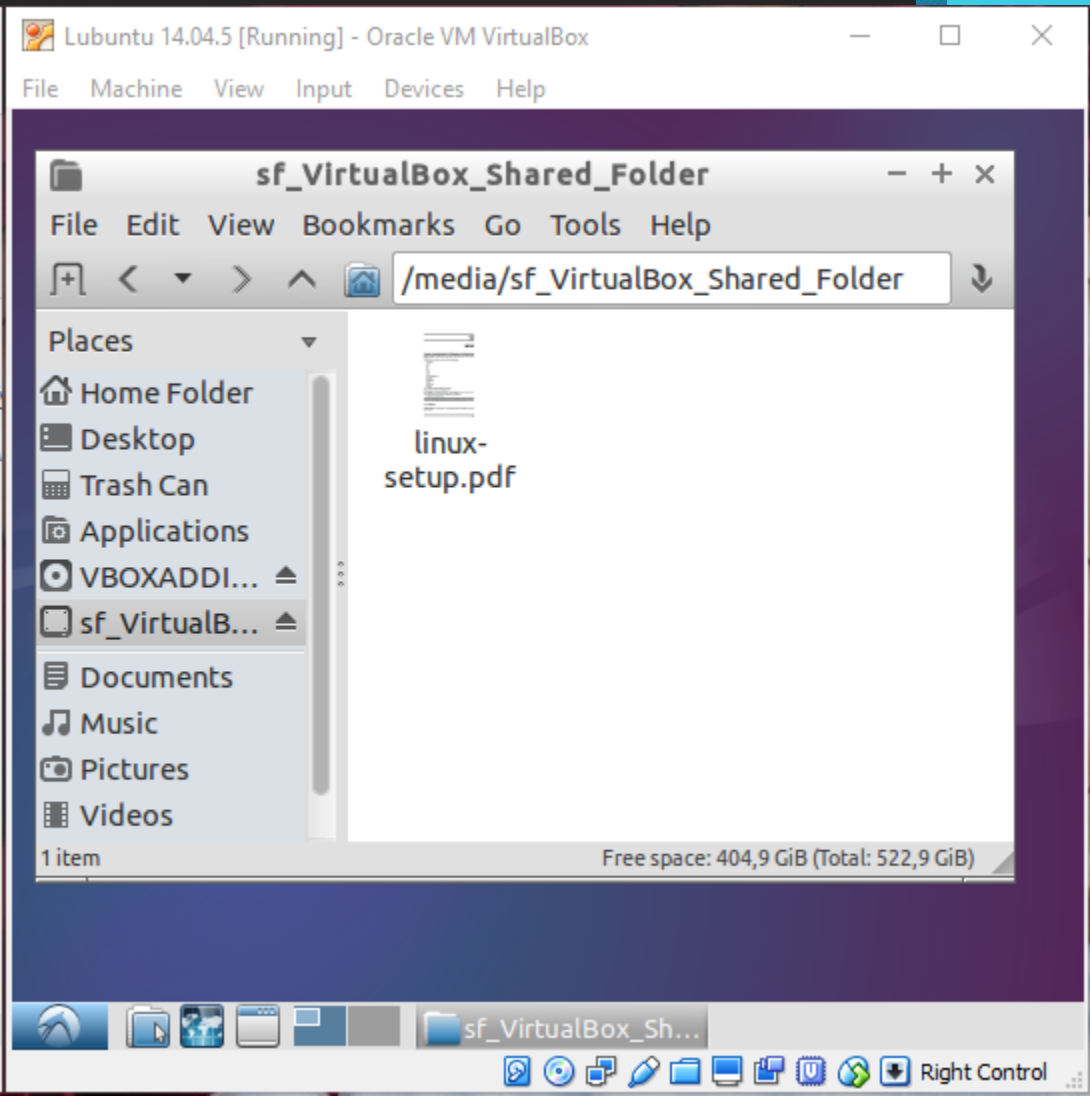
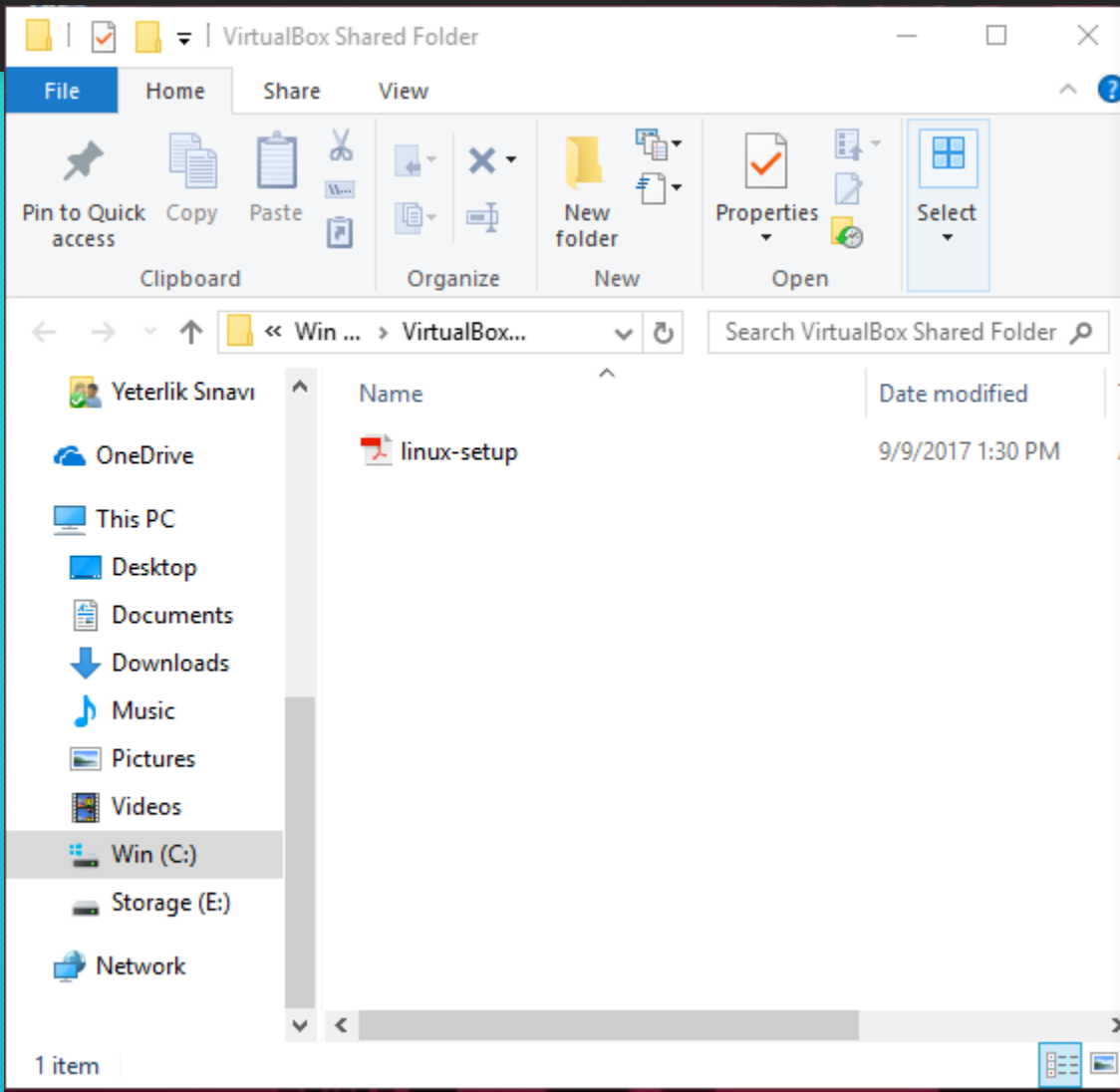
Creating a Shared Folder

- Add your user to VirtualBox shared folder group for giving access

A terminal window titled 'itucs@itucs-VirtualBox: ~' with a menu bar (File, Edit, Tabs, Help). The terminal shows the command 'sudo adduser itucs vboxsf' being entered and executed. The output indicates the user 'itucs' is being added to the 'vboxsf' group. The command 'sudo reboot' is then entered and highlighted with a red box.

```
itucs@itucs-VirtualBox:~$ sudo adduser itucs vboxsf
[sudo] password for itucs:
Adding user `itucs' to group `vboxsf' ...
Adding user itucs to group vboxsf
Done.
itucs@itucs-VirtualBox:~$ sudo reboot
```


Creating a Shared Folder



Sharing Clipboard Between Host OS and Virtual OS

