

INSTALL UBUNTU ON RB-100/RB-110

(METHOD 2: USING VIRTUALBOX)

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REQUIREMENTS

- + Ubuntu ISO file
 - Here, we use Ubuntu 9.04 for example
- + Sun VirtualBox
- + RoBoard RB-100/RB-110
- + 8GB MicroSD card
- + MicroSD CardReader

STEP1.

- + Download Ubuntu-9.04-DESKTOP-I386.ISO file
download web: <http://releases.ubuntu.com/9.04/>

Ubuntu 9.04 (Jaunty Jackalope)

This directory contains the most frequently downloaded Ubuntu images. Other images, including DVDs and source CDs, may be available on the [cdimage server](#).

Select an image

Ubuntu is distributed on four types of images described below.

Desktop CD

The desktop CD allows you to try Ubuntu without changing your computer at all, and at your option to install it permanently later. This type of CD is what most 256MB of RAM to install from this CD.

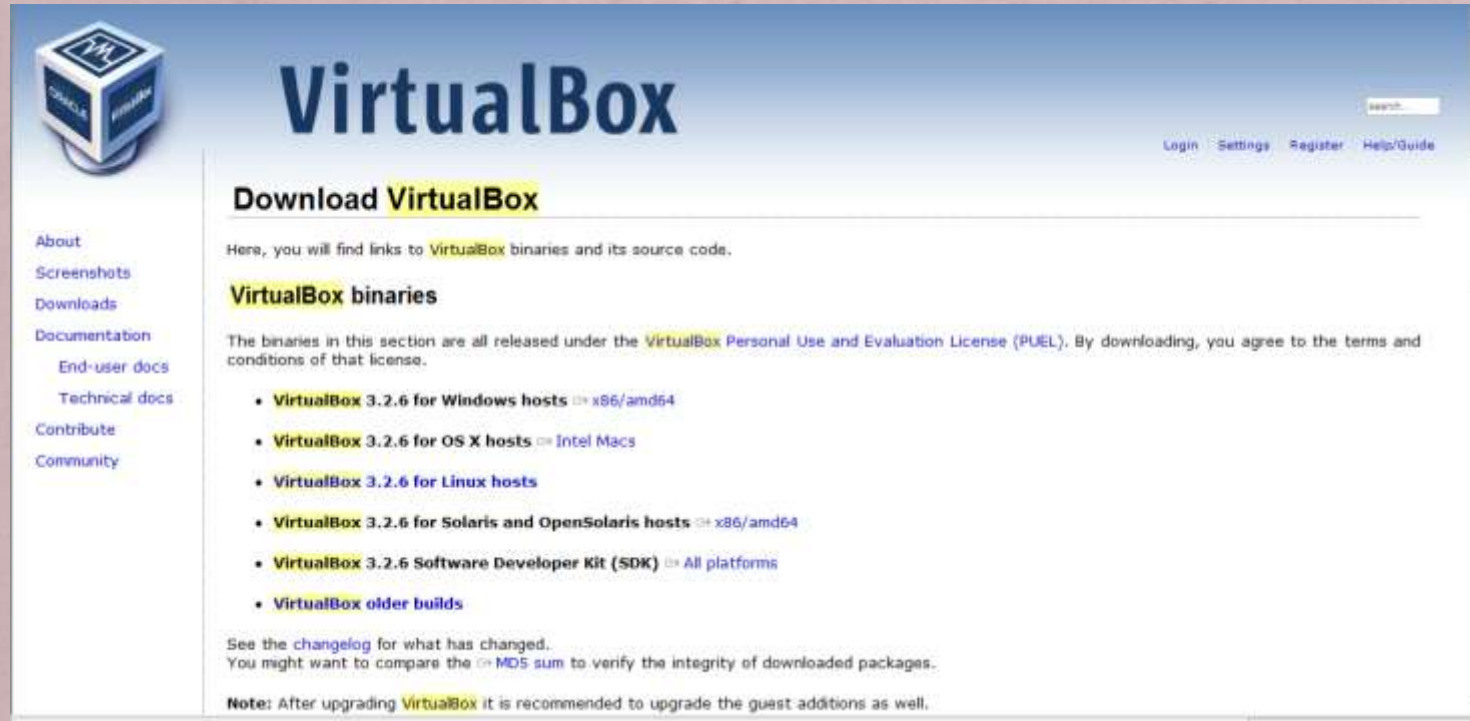
There are two images available, each for a different type of computer:

PC (Intel x86) desktop CD

For almost all PCs. This includes most machines with Intel/AMD/etc type processors and almost all computers that run Microsoft Windows, as well as i processors. Choose this if you are at all unsure.

STEP2.

- + Download VirtualBox and install it into your computer
download web: <http://www.VirtualBox.org/wiki/downloads>



The screenshot shows the VirtualBox website's download page. The header features the VirtualBox logo on the left and navigation links (Login, Settings, Register, Help/Guide) on the right. A search bar is also present. The main content area is titled 'Download VirtualBox' and includes a sub-section 'VirtualBox binaries'. This section lists various download links for different operating systems and architectures, such as Windows hosts (x86/amd64), OS X hosts (Intel Macs), Linux hosts, Solaris and OpenSolaris hosts (x86/amd64), and a Software Developer Kit (SDK) for all platforms. A note at the bottom recommends upgrading guest additions after upgrading VirtualBox.

VirtualBox

Download **VirtualBox**

Here, you will find links to **VirtualBox** binaries and its source code.

VirtualBox binaries

The binaries in this section are all released under the **VirtualBox** Personal Use and Evaluation License (PUEL). By downloading, you agree to the terms and conditions of that license.

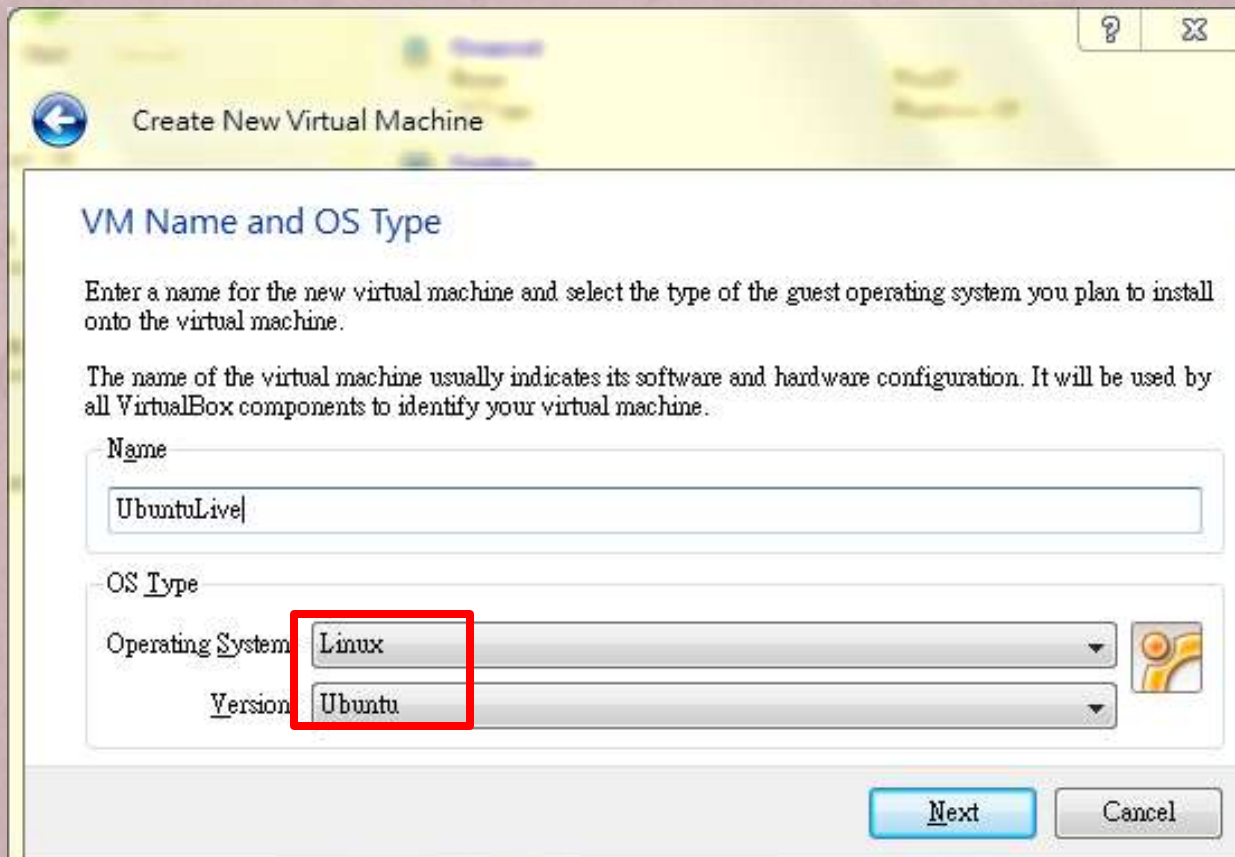
- **VirtualBox 3.2.6 for Windows hosts** ⇨ x86/amd64
- **VirtualBox 3.2.6 for OS X hosts** ⇨ Intel Macs
- **VirtualBox 3.2.6 for Linux hosts**
- **VirtualBox 3.2.6 for Solaris and OpenSolaris hosts** ⇨ x86/amd64
- **VirtualBox 3.2.6 Software Developer Kit (SDK)** ⇨ All platforms
- **VirtualBox older builds**

See the [changelog](#) for what has changed.
You might want to compare the ⇨ [MD5 sum](#) to verify the integrity of downloaded packages.

Note: After upgrading **VirtualBox** it is recommended to upgrade the guest additions as well.

STEP3.

- + Open VirtualBox and create a new Virtual Machine



Create New Virtual Machine

VM Name and OS Type

Enter a name for the new virtual machine and select the type of the guest operating system you plan to install onto the virtual machine.

The name of the virtual machine usually indicates its software and hardware configuration. It will be used by all VirtualBox components to identify your virtual machine.

Name
UbuntuLive

OS Type

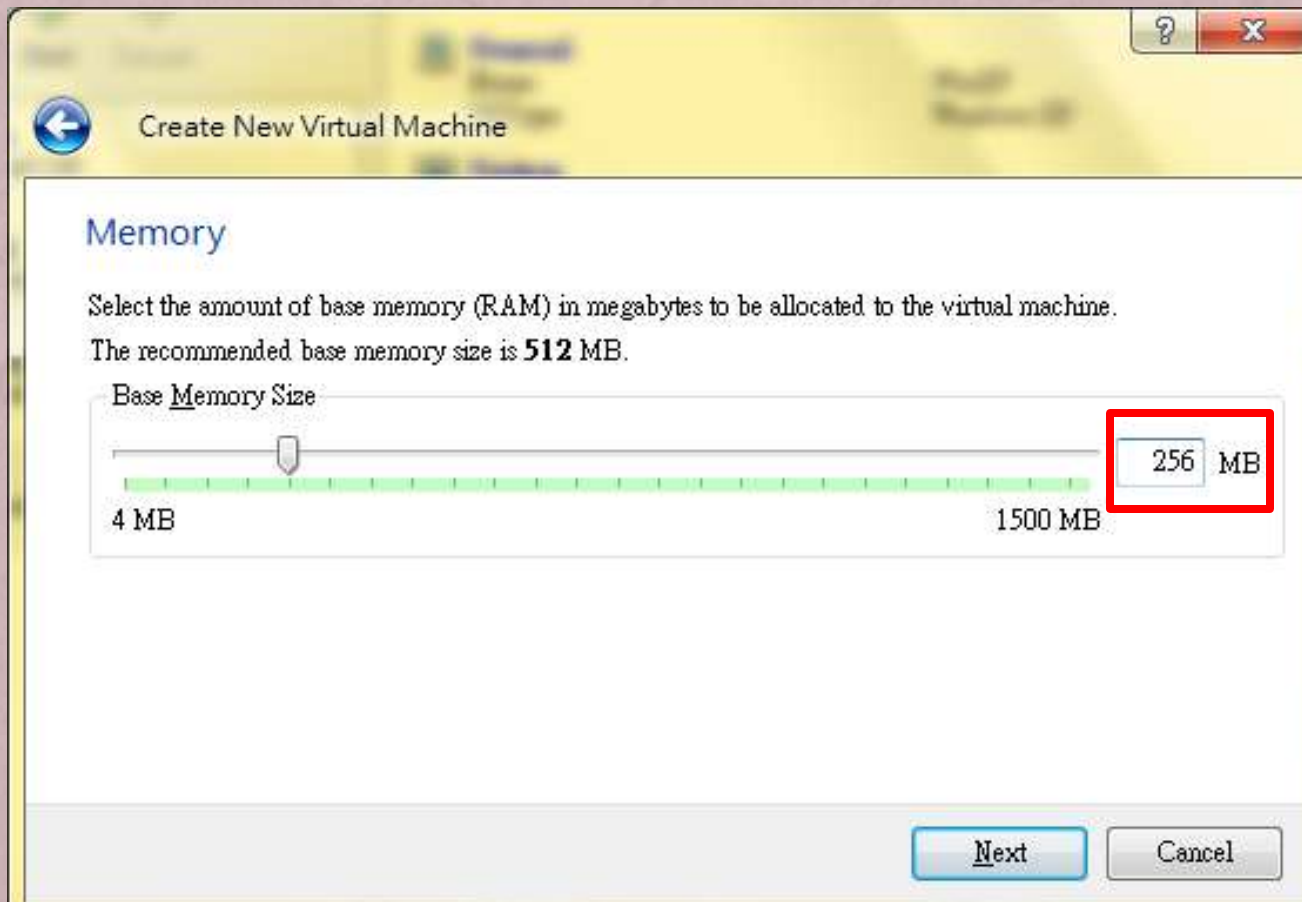
Operating System: Linux

Version: Ubuntu

Next Cancel

STEP4.

- + Set memory size 256 MB (to match RoBoard RB-100/RB-110)



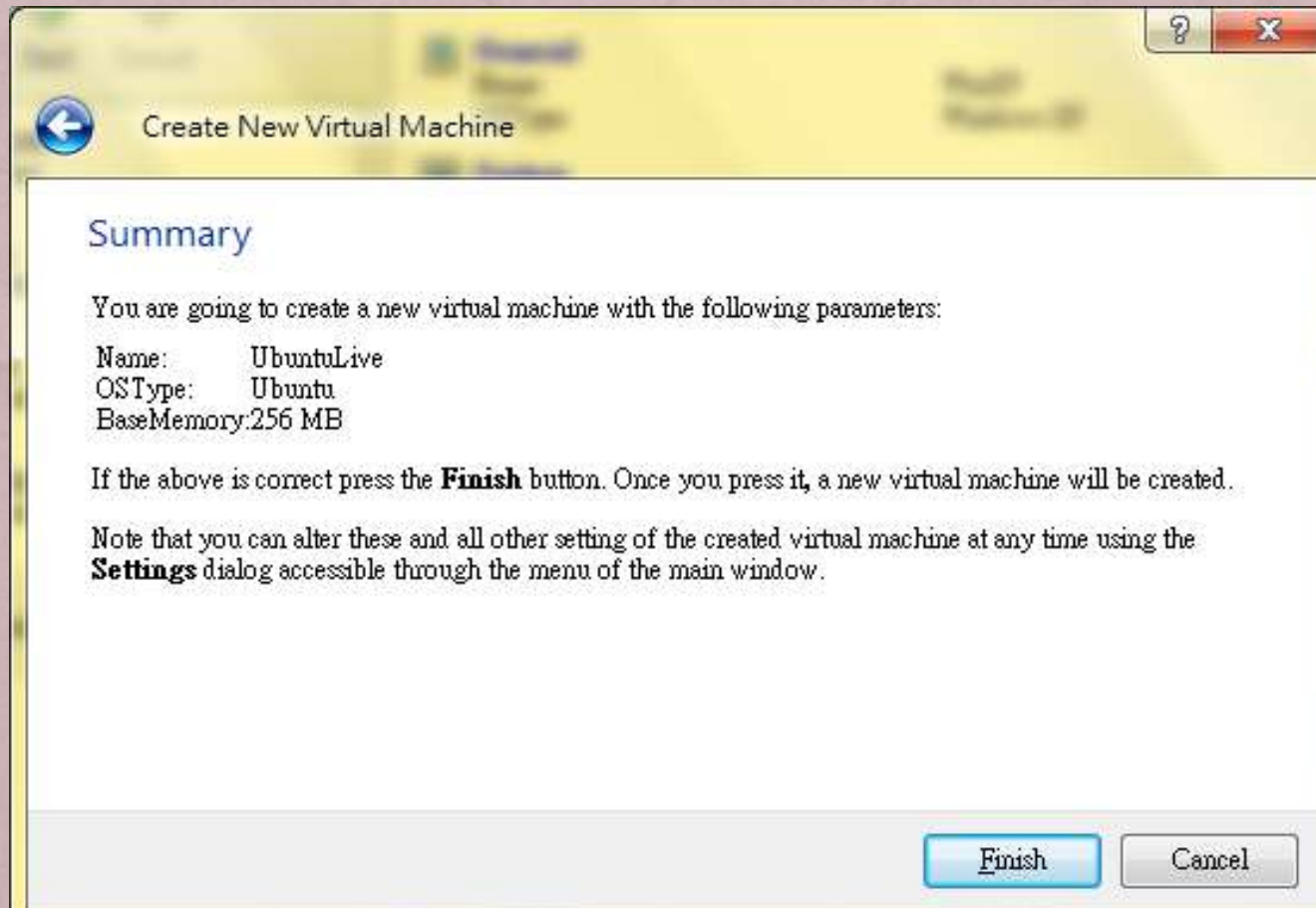
STEP 5.

+ Don't click "Boot Hard Disk"



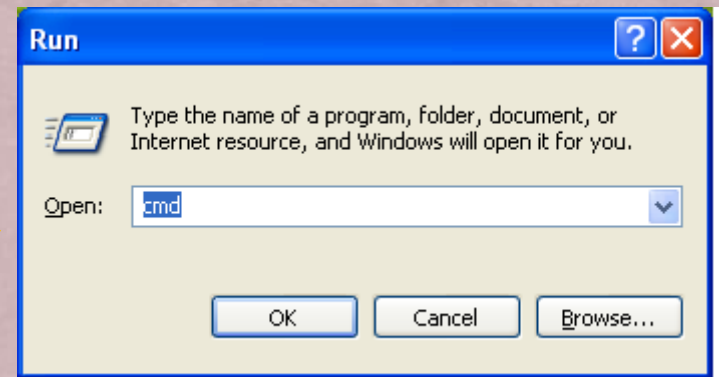
STEP 6.

+ Click “Finish”



STEP7. (FOR WINXP)

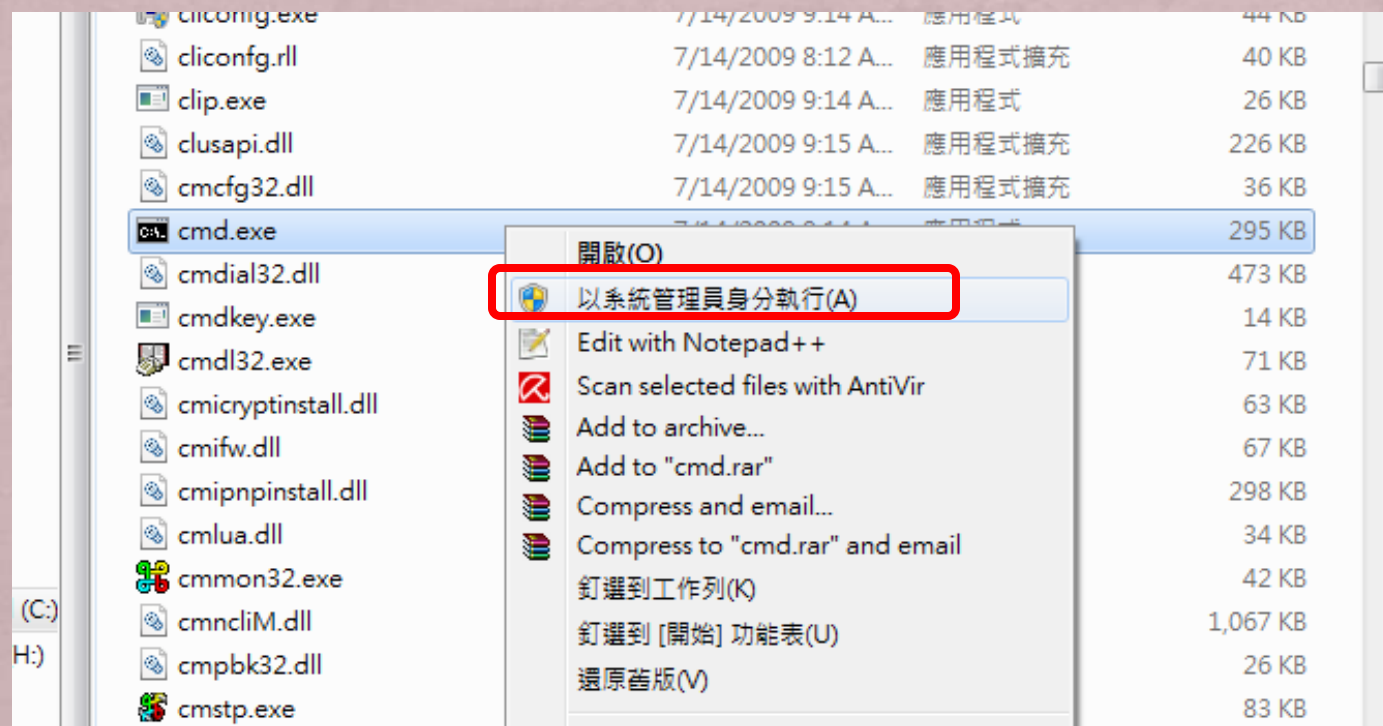
- + Open a MS-DOS Prompt
 - Click “Start Menu” → Click “Run” → Type “cmd”



STEP7. (FOR VISTA OR WIN7)

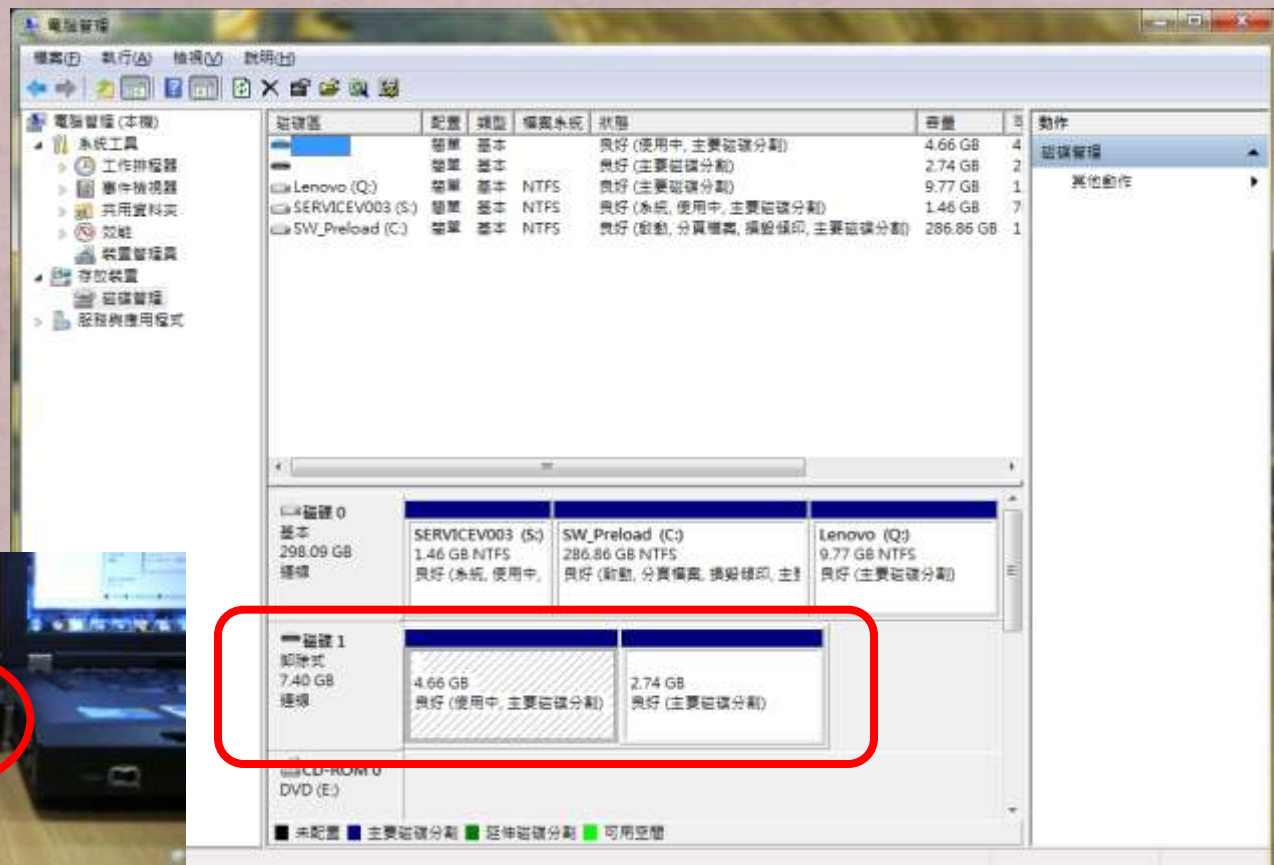
+ Open a MS-DOS Prompt

- Find the “cmd.exe”
- Right click on “cmd.exe” and choose run as “Administrator”



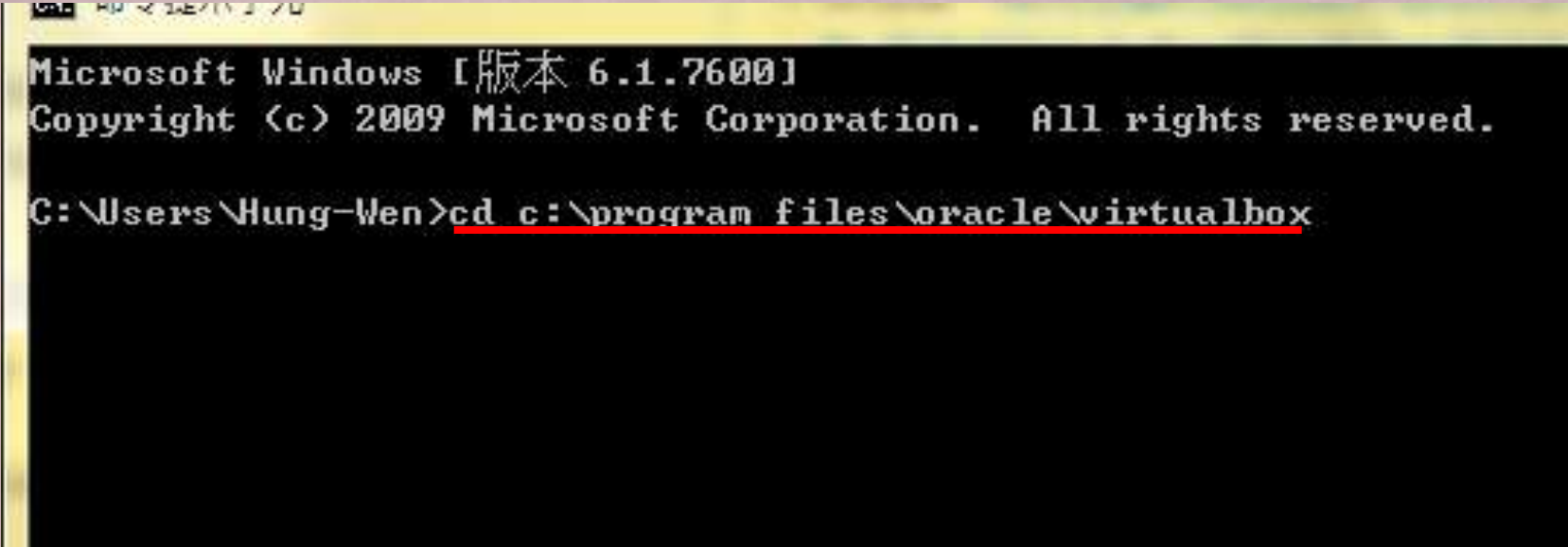
STEP8.

- + Plugin the USB card reader with the MicroSD card
 - In this example, the USB device is numbered as Disk 1



STEP9.

- + In the MS-DOS Prompt, change the directory to the VirtualBox directory
 - In this example, VirtualBox is installed in C:\Program Files\Oracle\Virtualbox



```
Microsoft Windows [版本 6.1.7600]  
Copyright (c) 2009 Microsoft Corporation. All rights reserved.  
  
C:\Users\Hung-Wen>cd c:\program files\oracle\virtualbox
```

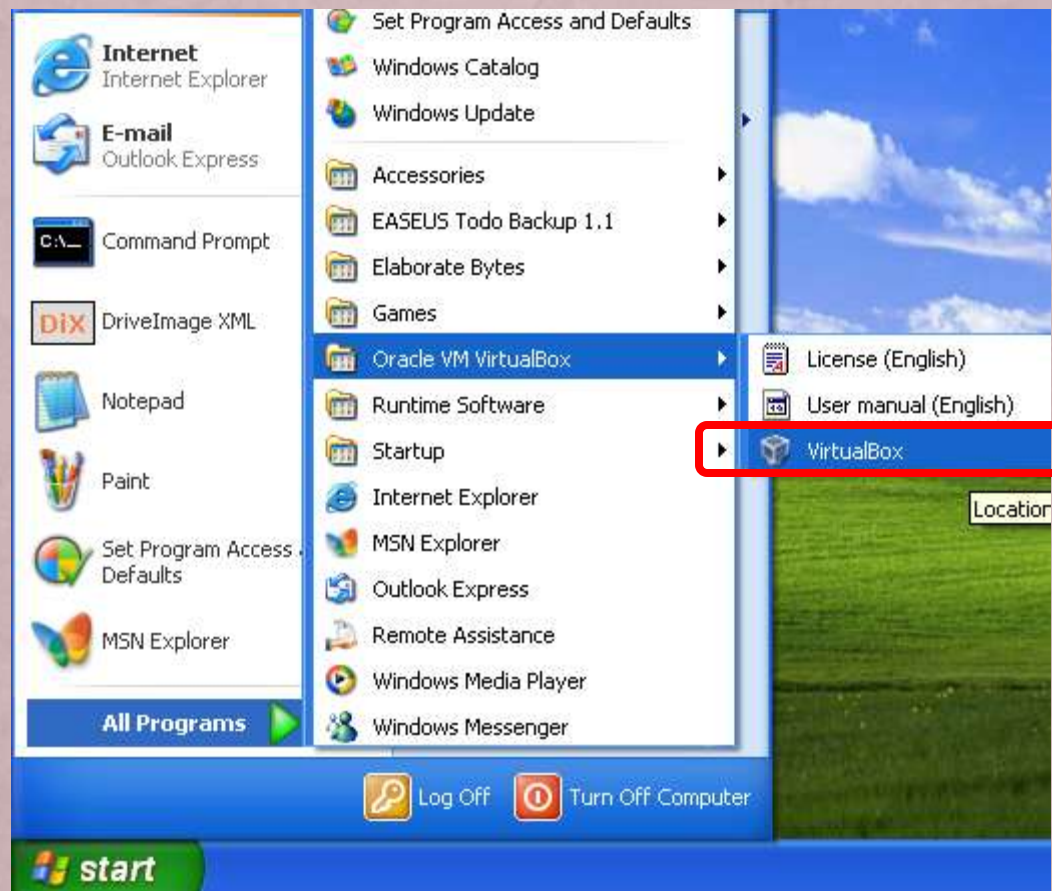

STEP10.

- + Mount the USB device as a VirtualBox raw disk
 - Type in the MS-DOS Prompt:
`vboxmanage internalcommands createrawvmdk`
`-filename <Absolute Path to output file>`
`-rawdisk <Drive Specification> -register`
 - In this example,
 - × the path to output file is "c:\users\hung-wen\.virtualbox\usb.vmdk"
 - × the drive specification of the USB device is "\\.\physicaldrive1" (since it is numbered as Disk 1)

```
c:\Program Files\Oracle\VirtualBox>vboxmanage internalcommands createrawvmdk -fi  
lename c:\users\hung-wen\.virtualbox\usb.vmdk -rawdisk \\.\physicaldrive1 -regis  
ter  
Oracle VM VirtualBox Command Line Management Interface Version 3.2.6  
(C) 2005-2010 Oracle Corporation  
All rights reserved.  
  
RAW host disk access UMDK file c:\users\hung-wen\.virtualbox\usb.vmdk created su  
ccessfully.  
c:\Program Files\Oracle\VirtualBox>
```


STEP 11. (FOR WINXP)

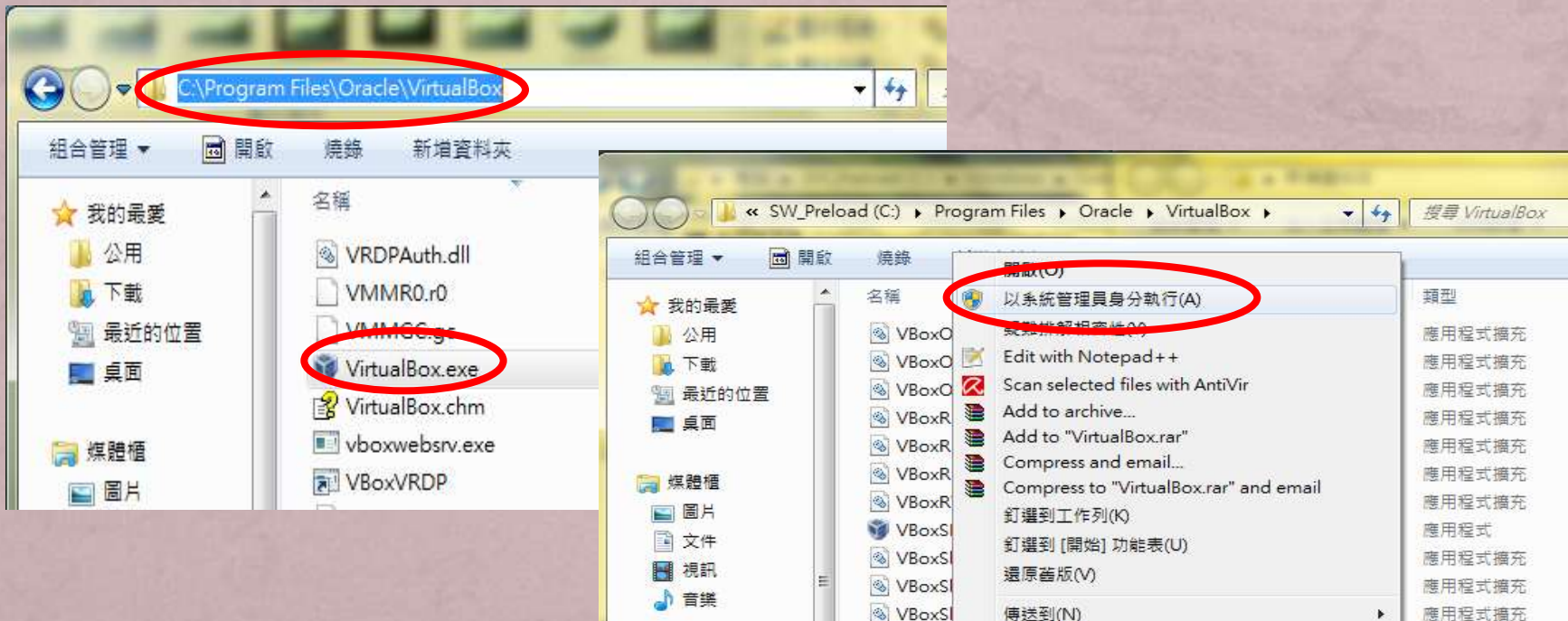
+ Launch VirtualBox in Windows XP



STEP11. (FOR VISTA OR WIN7)

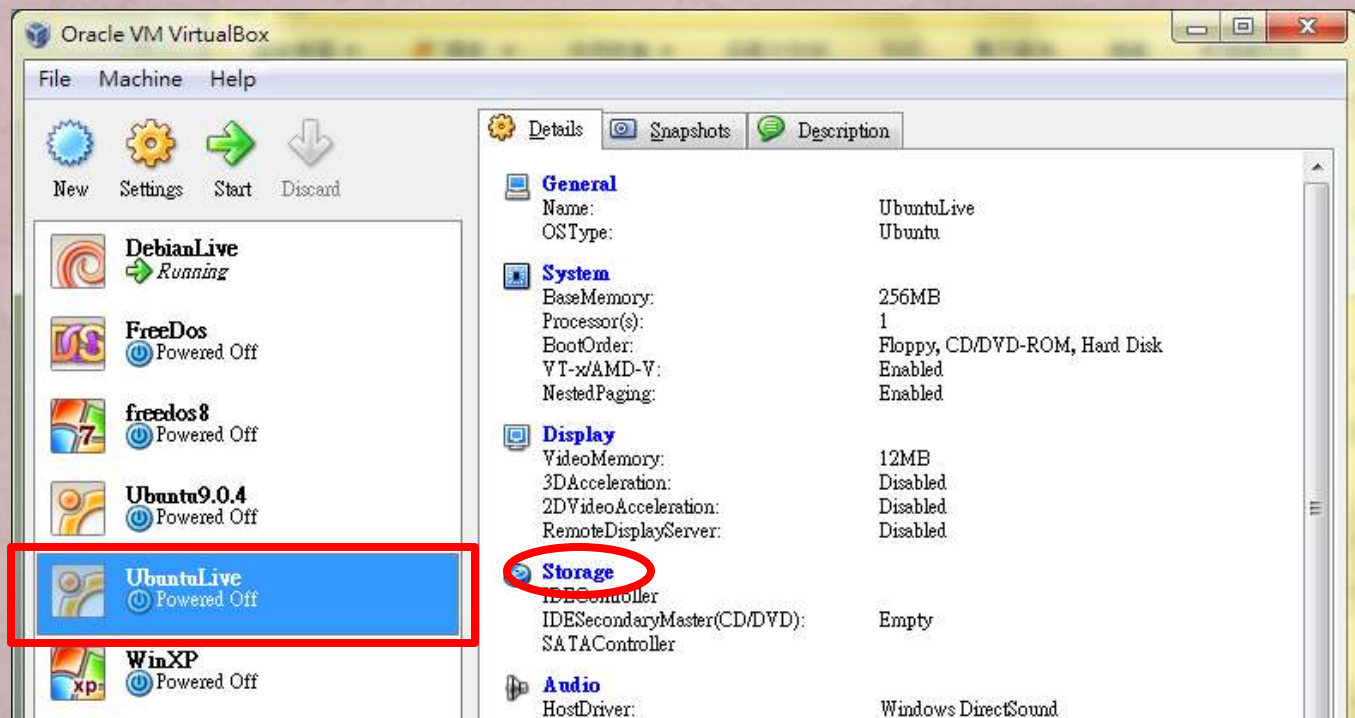
+ Launch VirtualBox

- Find the “VirtualBox.exe”
- Right click on “VirtualBox.exe” and choose run as “Administrator”



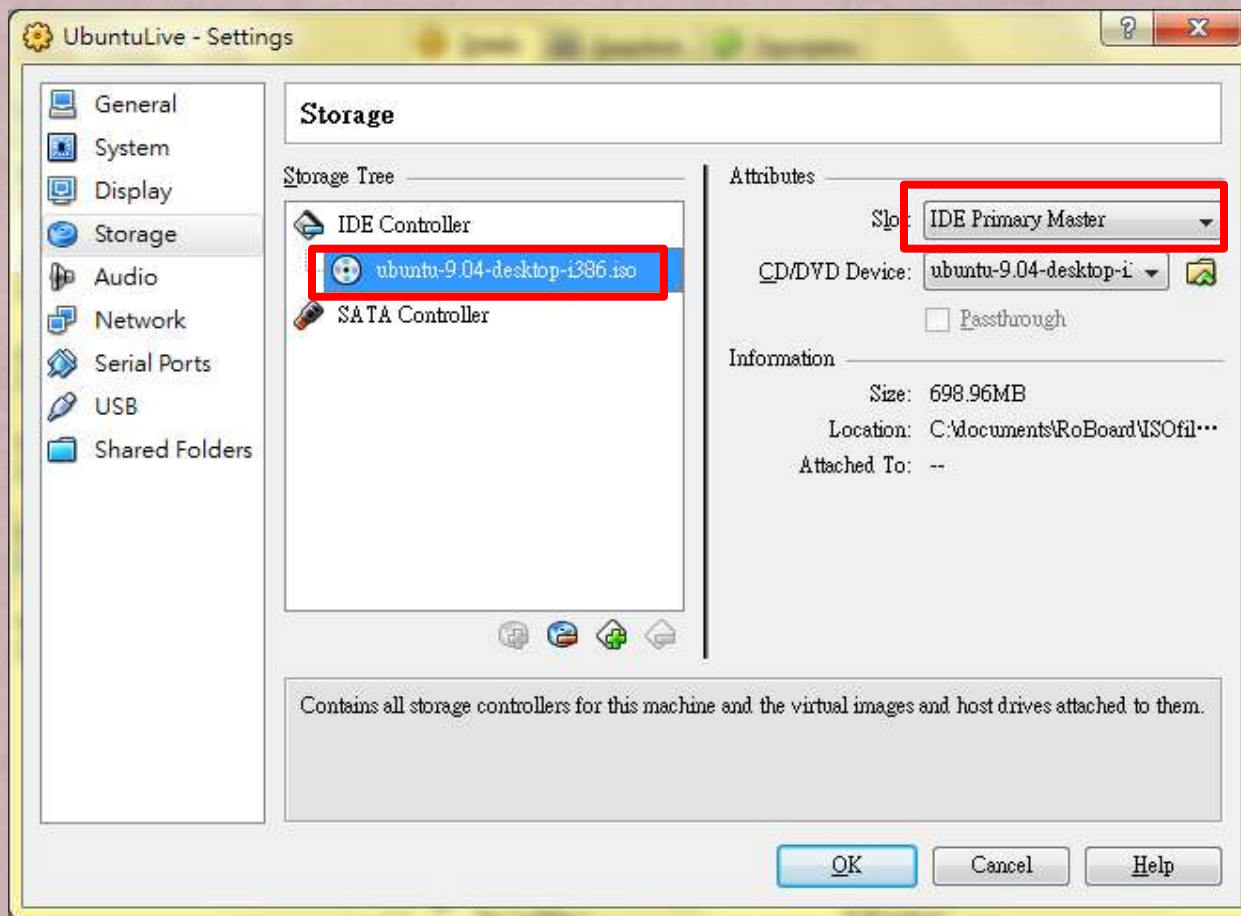
STEP 12.

- + Choose the virtual machine built in Step 3 and click “Storage”



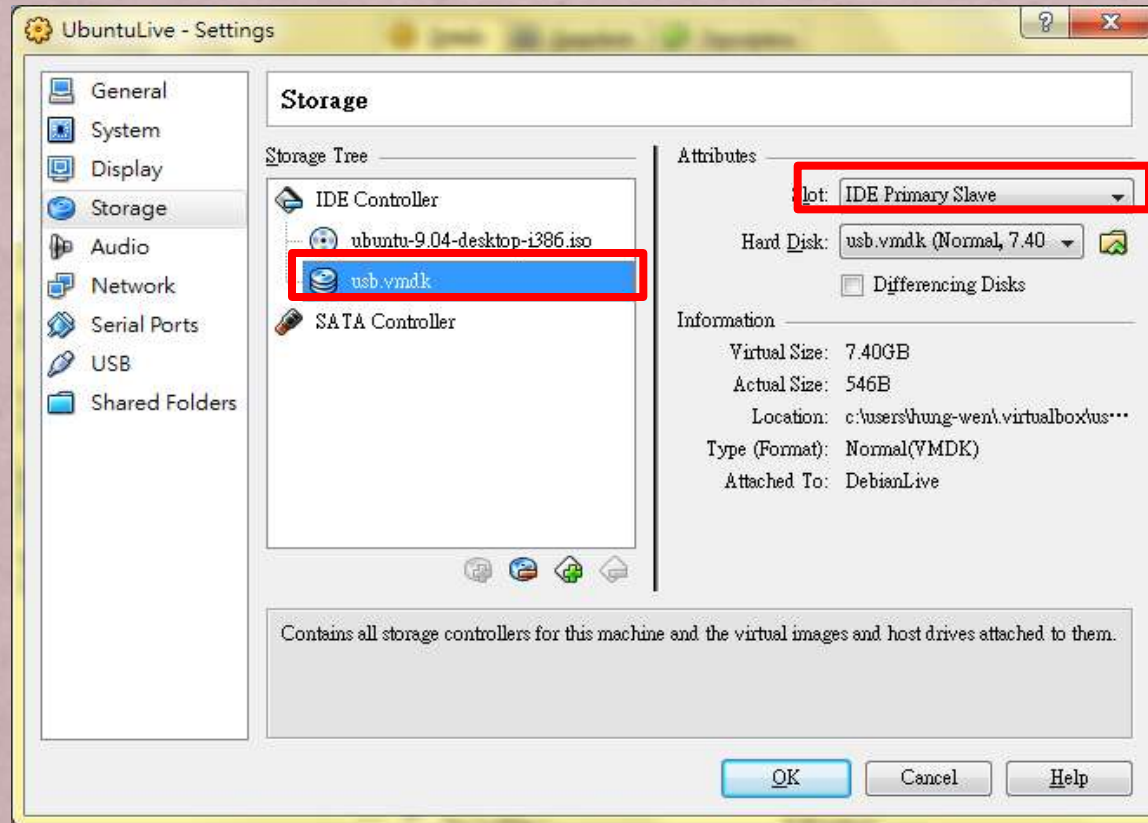
STEP13.

- + Mount Ubuntu 9.04 ISO file and set it as IDE Primary Master



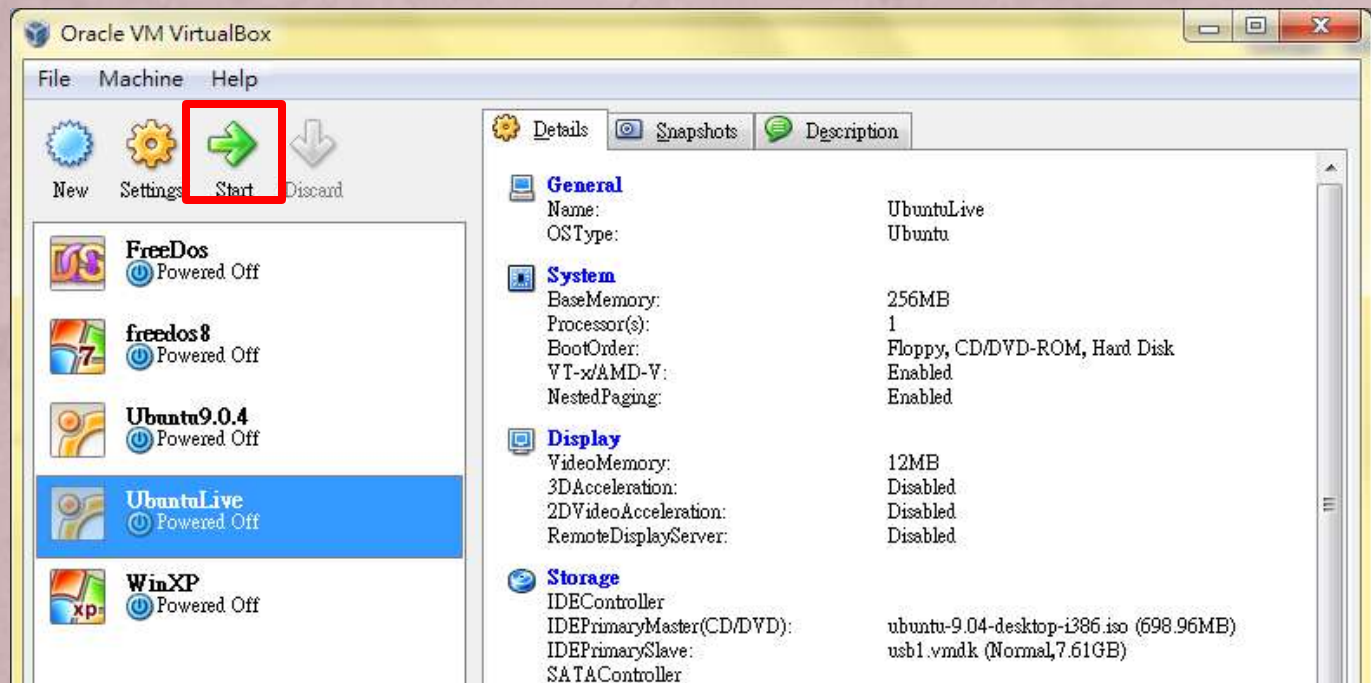
STEP14.

- + Mount the “usb.vmdk” file created in Step10 and set it as IDE Primary Slave



STEP 15.

+ Click Start



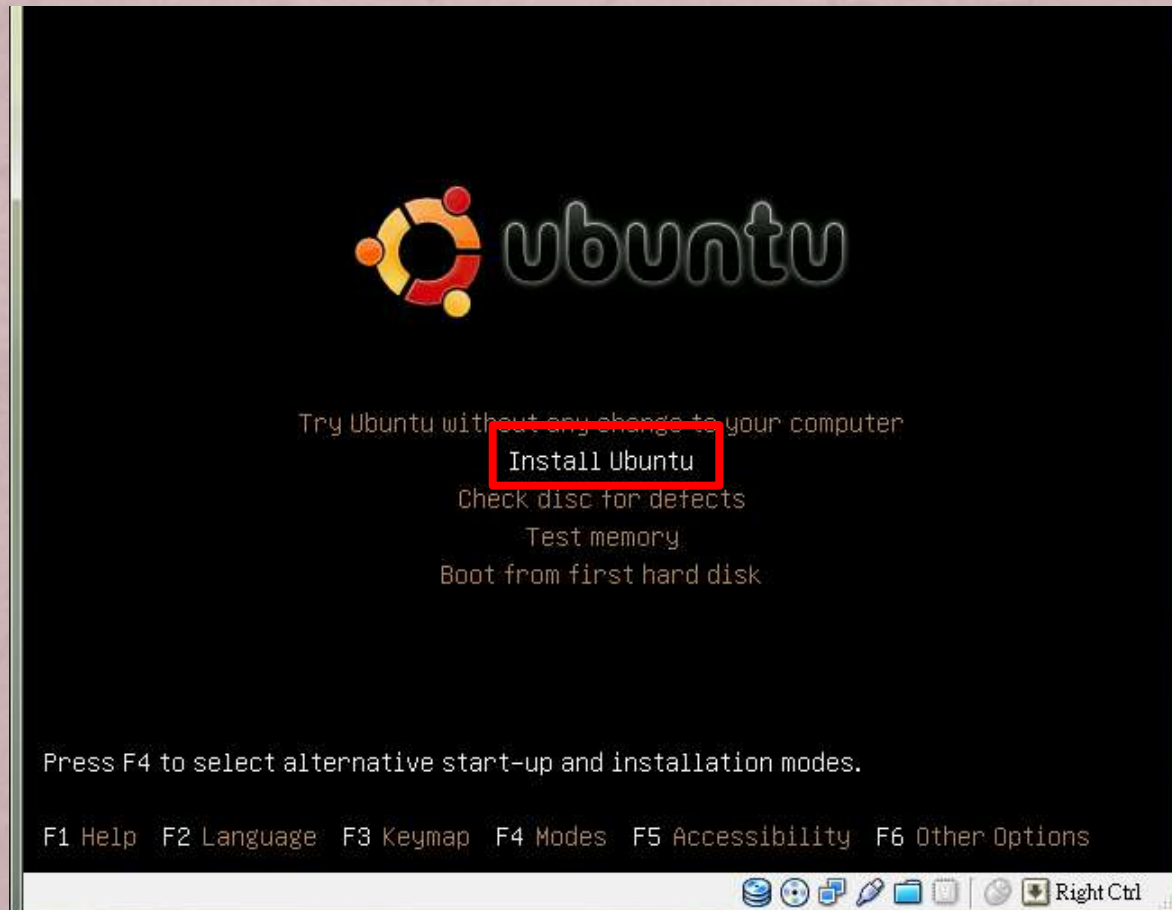
STEP 16.

- + VirtualBox will boot into the Ubuntu installation ISO
- + Choose the language for installation process

Language		
Amharic	Hebrew	Polski
Arabic	Hindi	Português do Brasil
Беларуская	Hrvatski	Português
Български	Magyar	Română
Bengali	Bahasa Indonesia	Русский
Bosanski	Italiano	Sámegiellii
Català	日本語	Slovenčina
Čeština	ქართული	Slovenščina
Dansk	Khmer	Shqip
Deutsch	한국어	Svenska
Dzongkha	Kurdî	Tamil
Ελληνικά	Lietuviškai	Thai
English	Latviski	Tagalog
Esperanto	Македонски	Türkçe
Español	Malayalam	Українська
Eesti	Marathi	Tiếng Việt
Euskaraz	Norsk bokmål	Wolof
Suomi	Nepali	中文(简体)
Français	Nederlands	中文(繁體)
Galego	Norsk nynorsk	
Gujarati	Punjabi (Gurmukhi)	

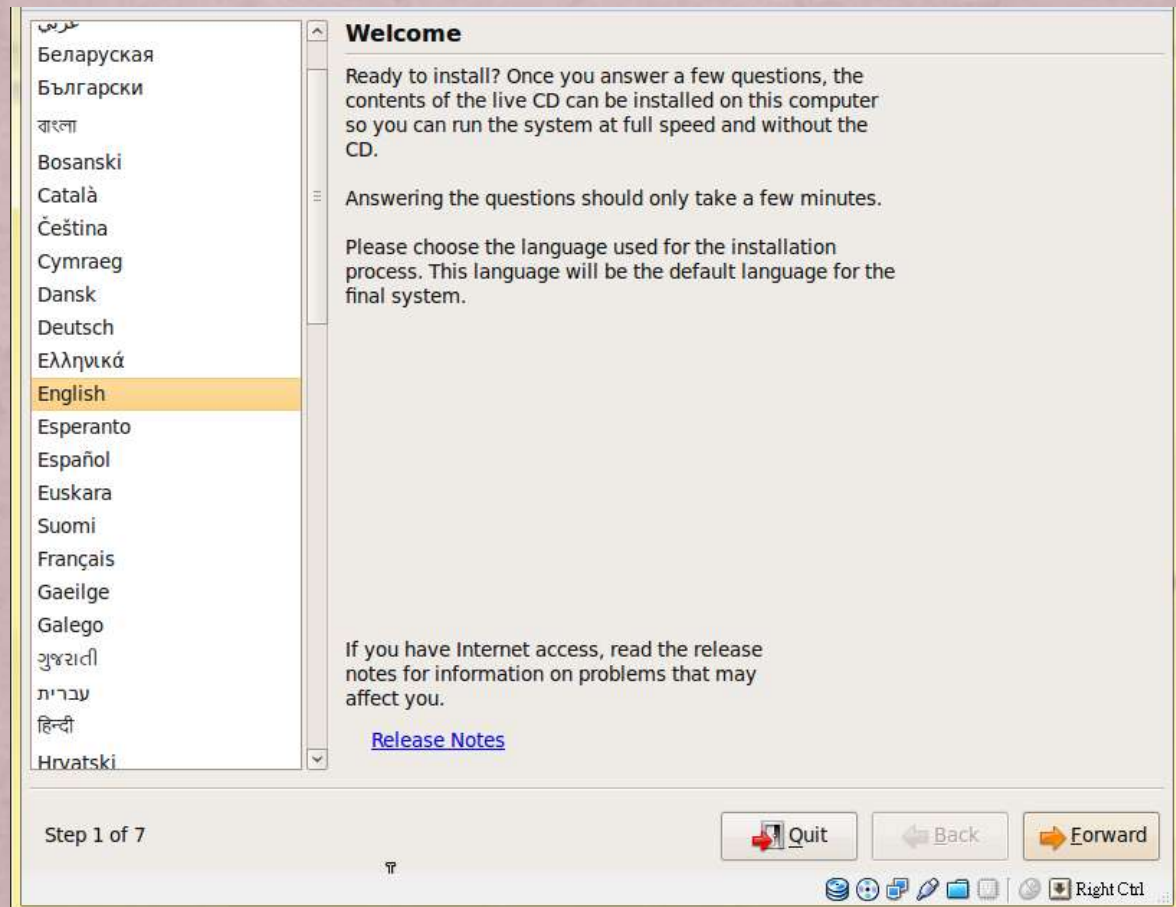
STEP 17.

- + Choose “Install Ubuntu”



STEP18.

+ Choose installation language



STEP19.

+ Choose Region and City

Where are you?
Select your time zone from the map, or by region and city.



Region: City:

Step 2 of 7

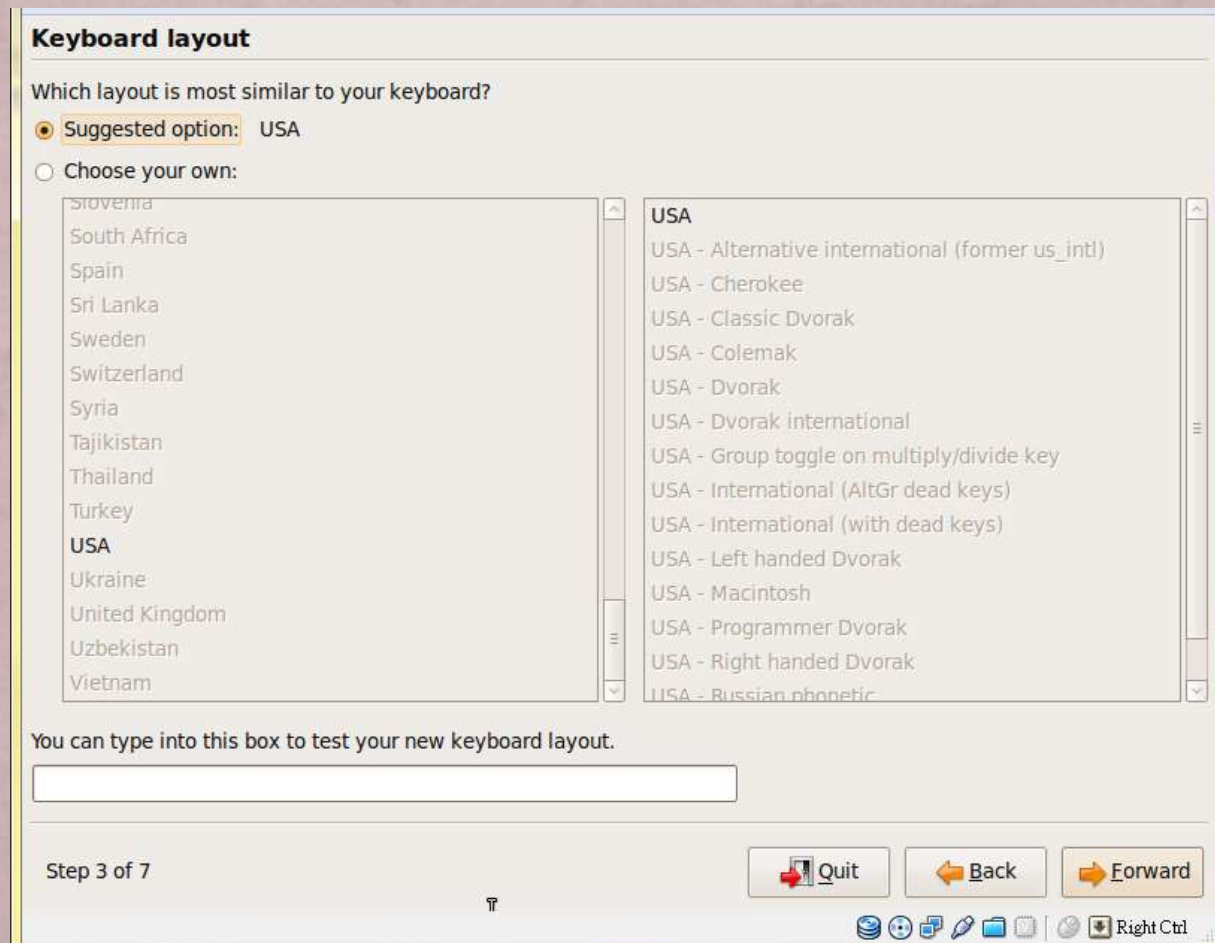
 Quit

 Back

 Forward

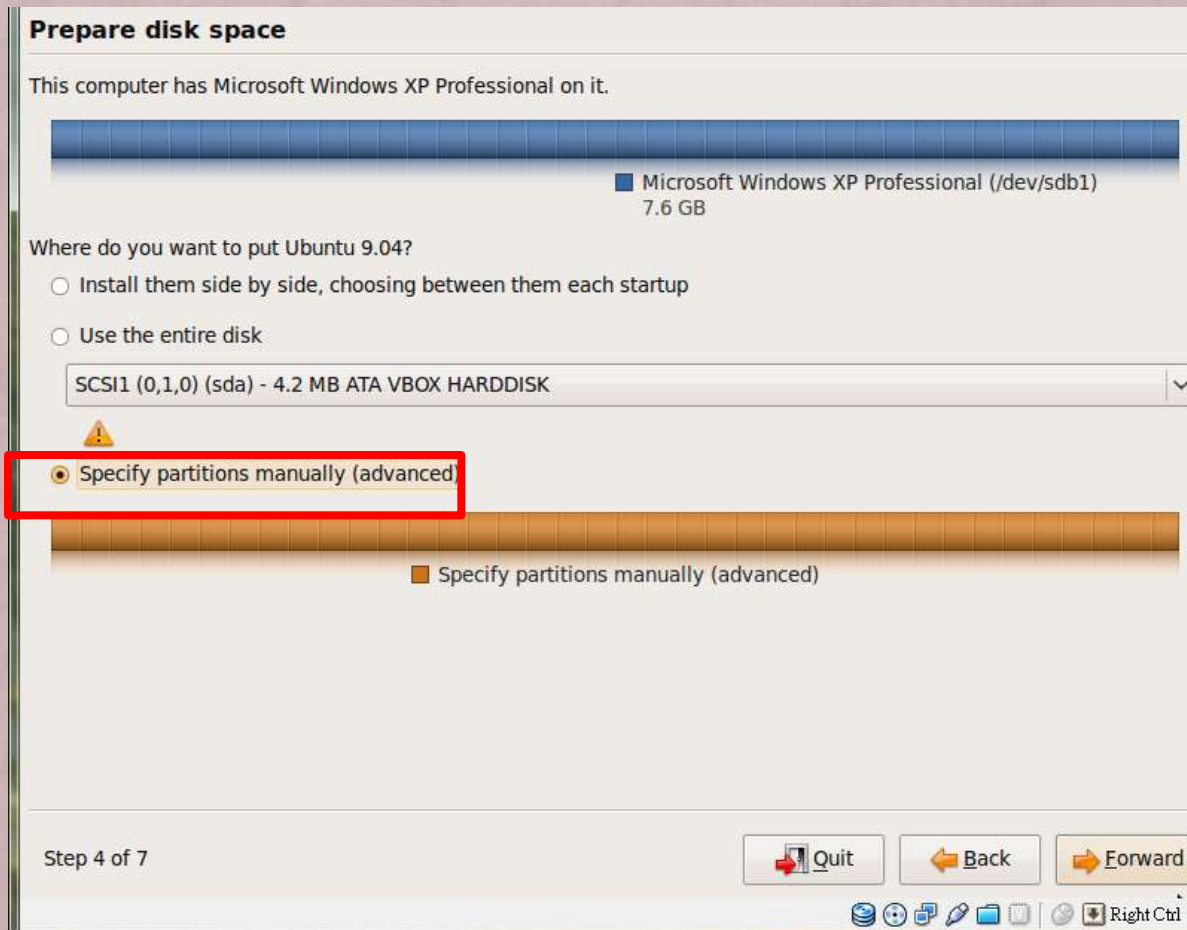
STEP 20.

+ Choose keyboard layout



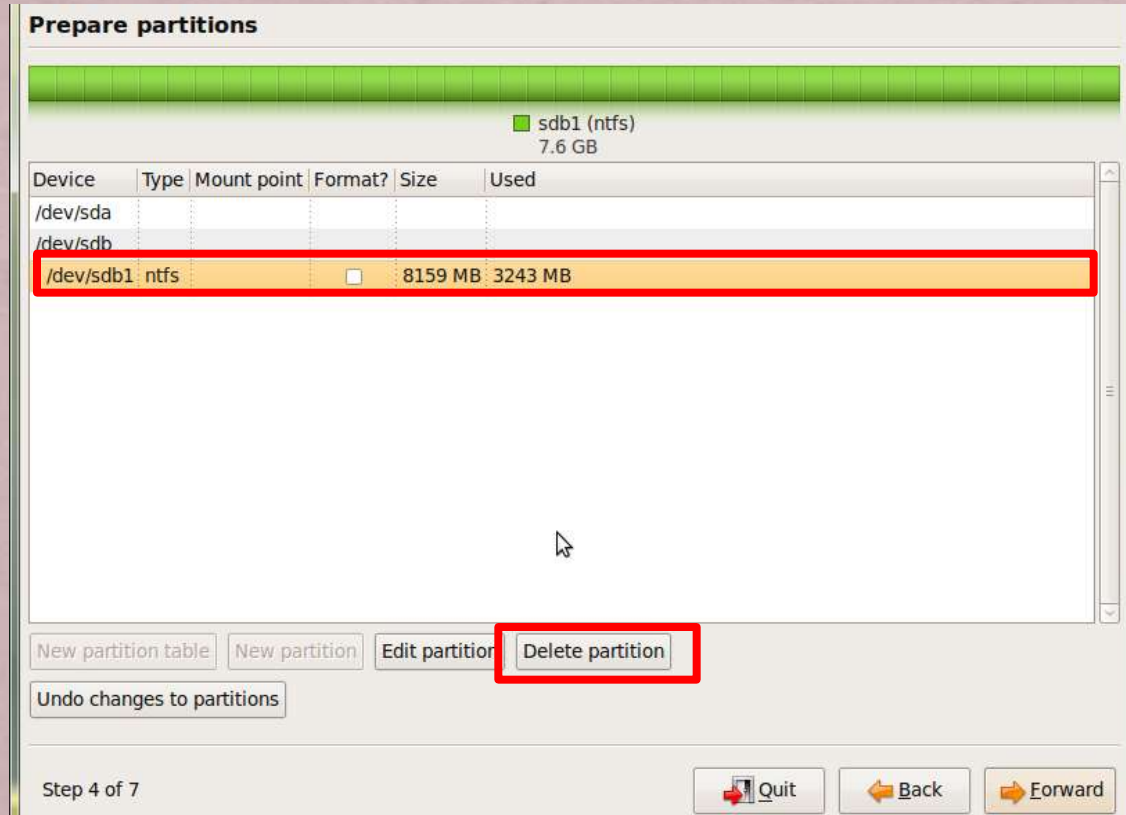
STEP 21.

- + Choose “specify partitions manually (advanced)”



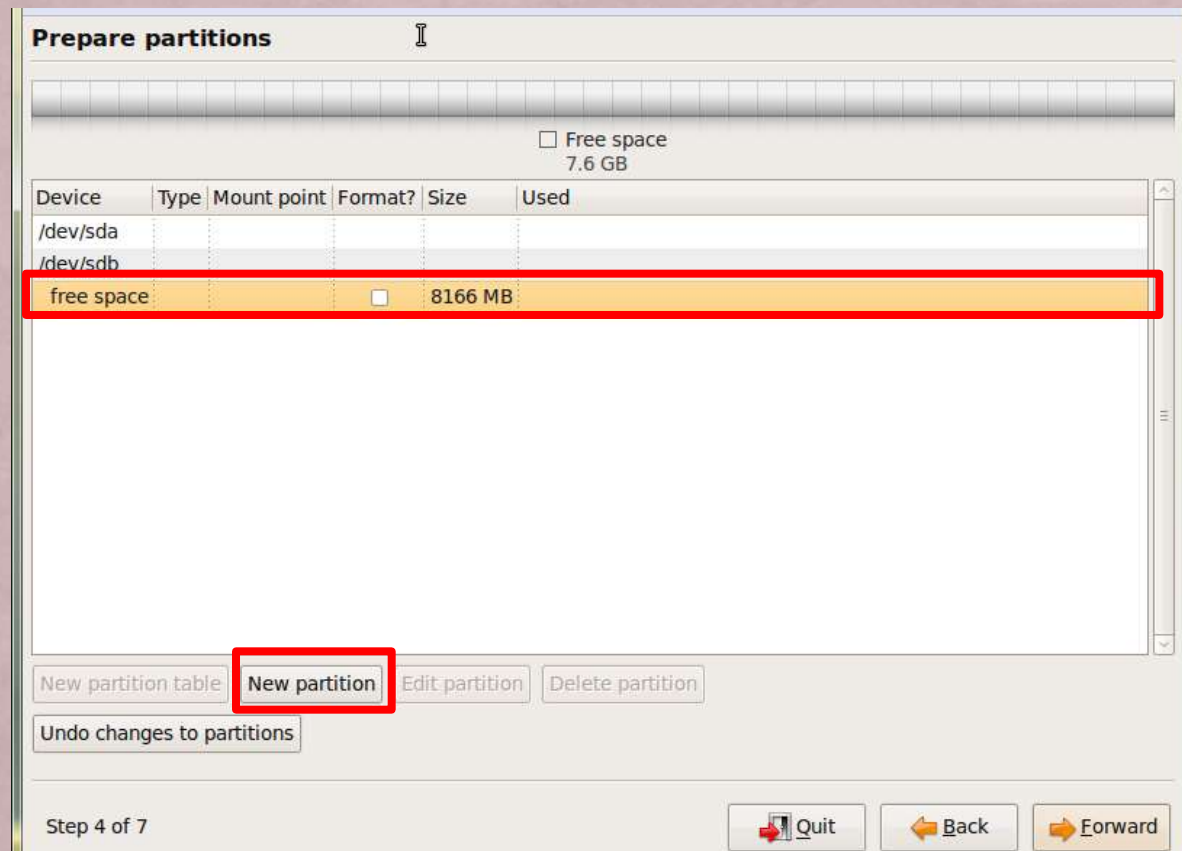
STEP22. [OPTION]

- + Repartition the USB raw disk
 - 1. Delete the original partitions of “usb.vmdk” if they exist



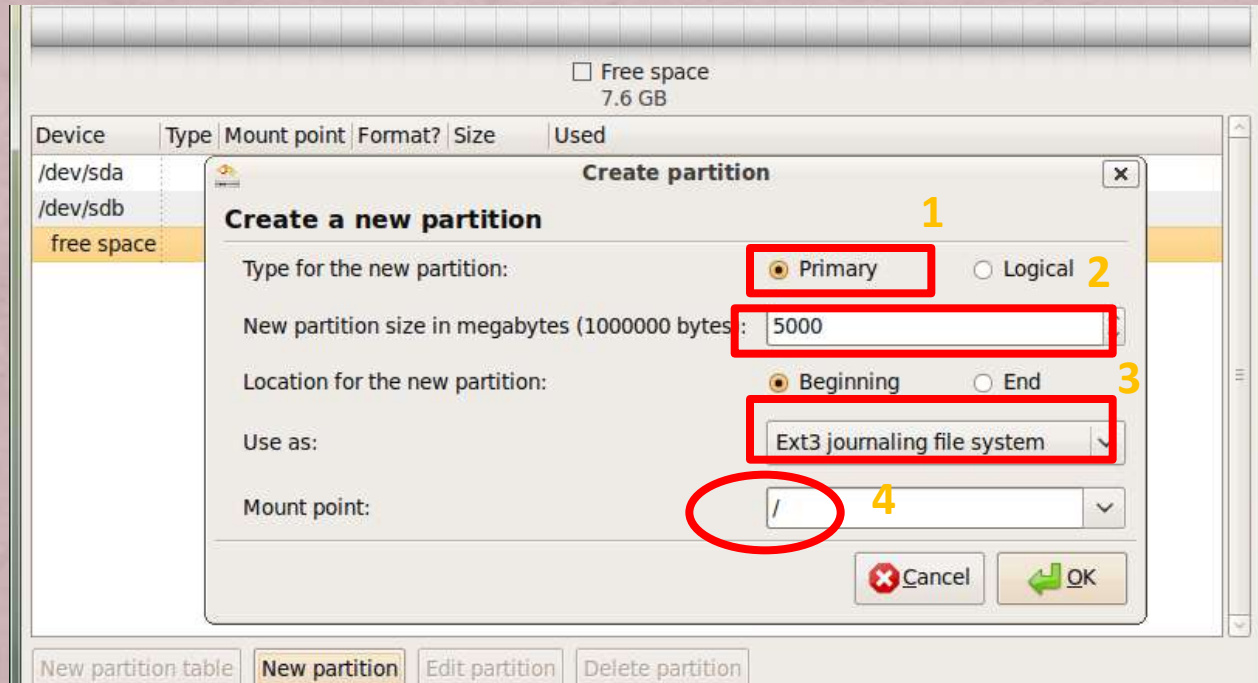
STEP22. [OPTION]

- + Repartition the USB raw disk (cont.)
 - 2. Create new partitions



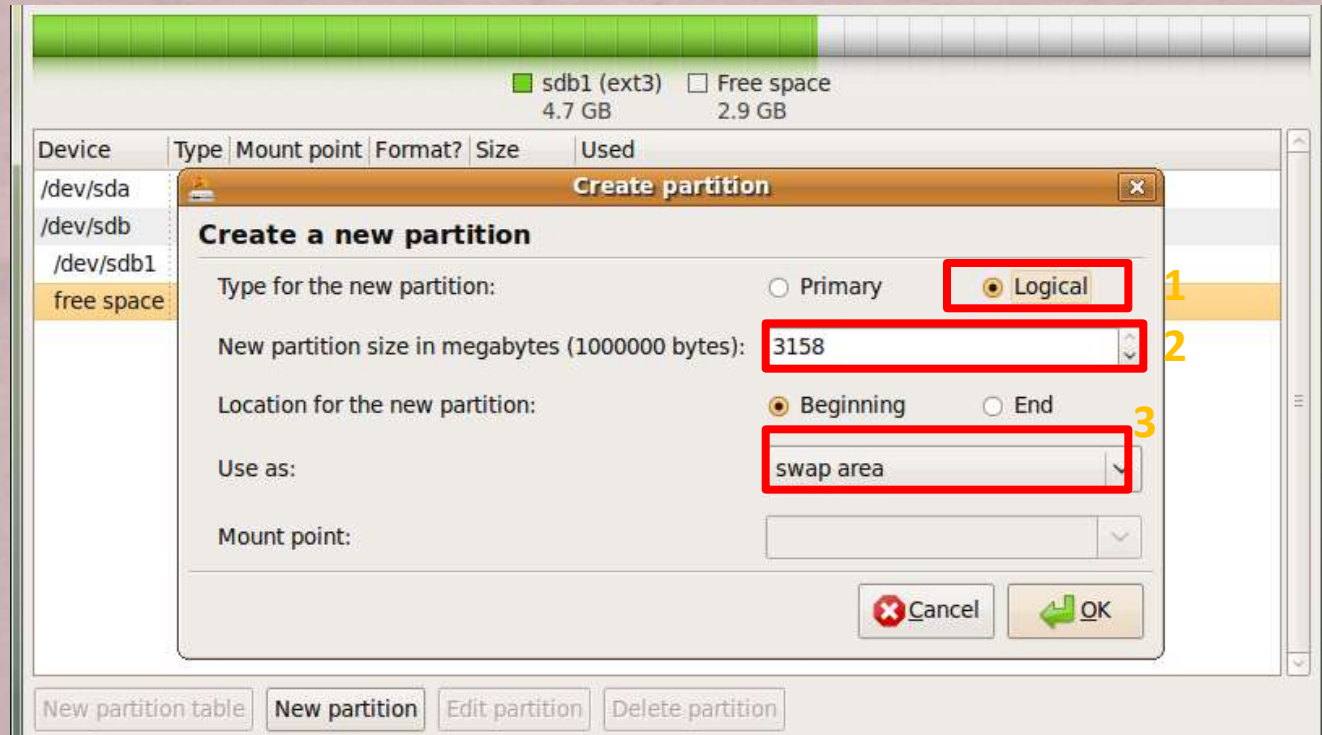
STEP22. [OPTION]

- + Repartition the USB raw disk (cont.)
 - 3. Set the Primary partition



STEP22. [OPTION]

- + Repartition the USB raw disk (cont.)
 - 4. Set the Logical partition



STEP23.

+ Set username and password

Who are you?

What is your name?

What name do you want to use to log in?

If more than one person will use this computer, you can set up multiple accounts after installation.

Choose a password to keep your account safe.

Enter the same password twice, so that it can be checked for typing errors. A good password will contain a mixture of letters, numbers and punctuation, should be at least eight characters long, and should be changed at regular intervals.




What is the name of this computer?

This name will be used if you make the computer visible to others on a network.

☐ Log in automatically

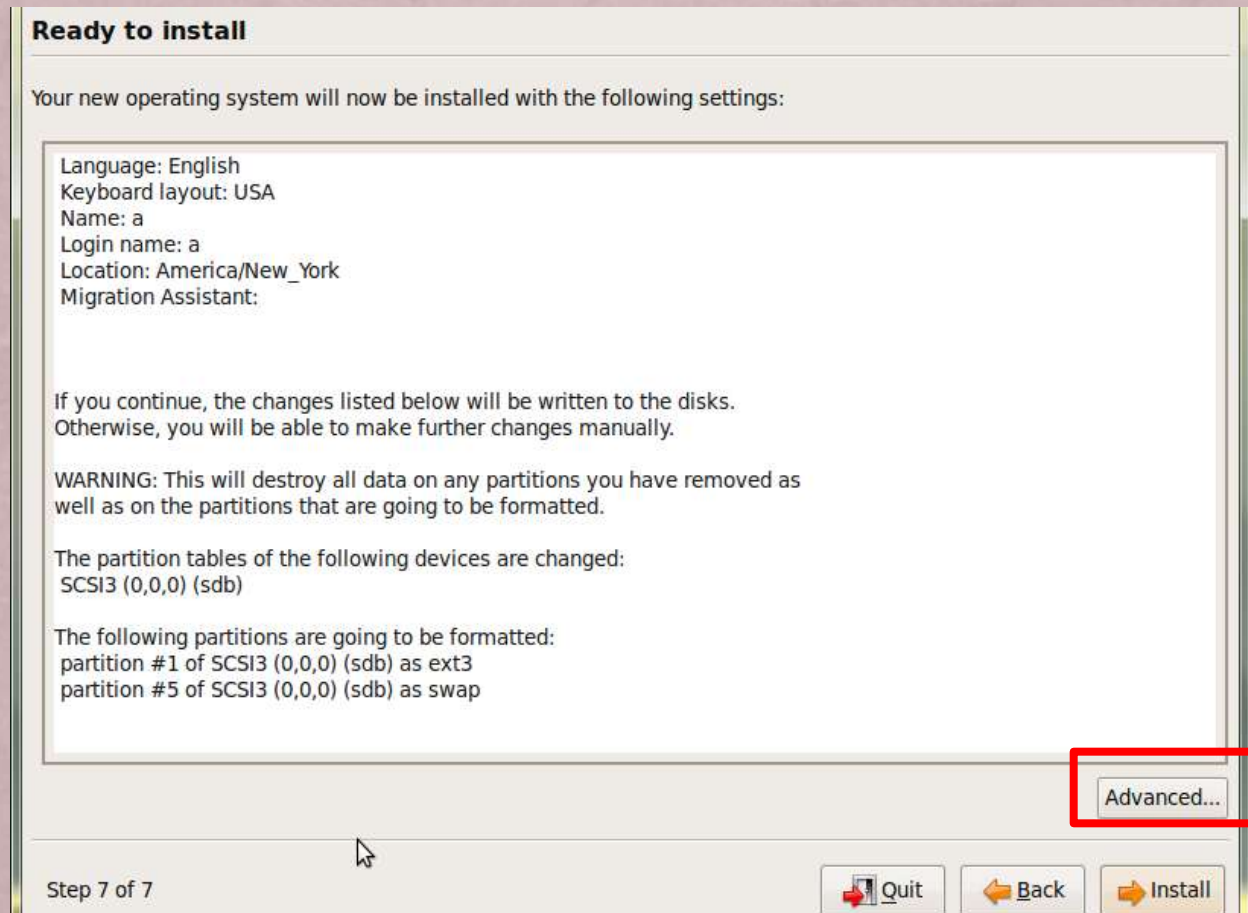
☒ Require a password to log in

Step 5 of 7

 Quit  Back  Forward

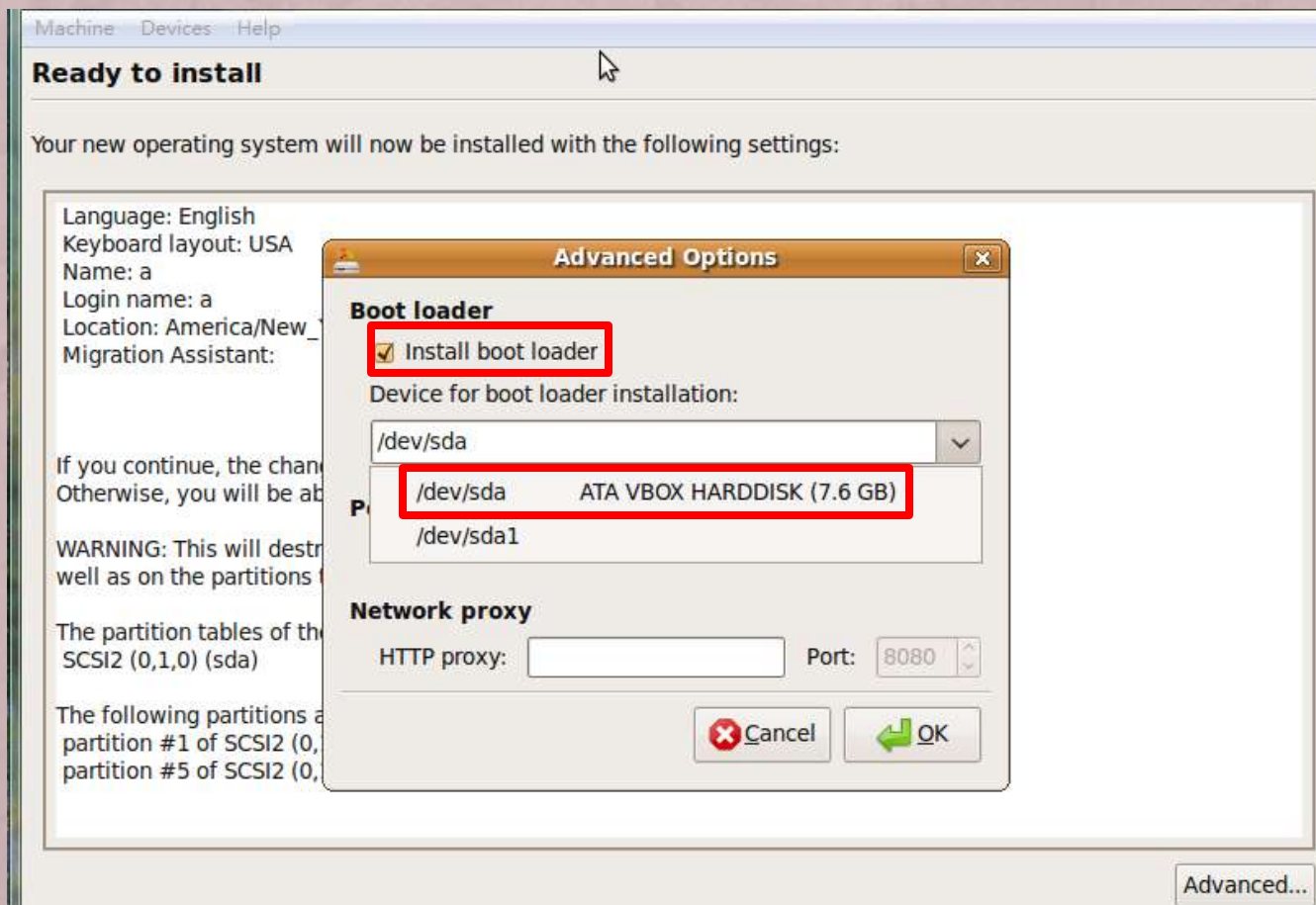
STEP 24.

+ Click “Advanced...”



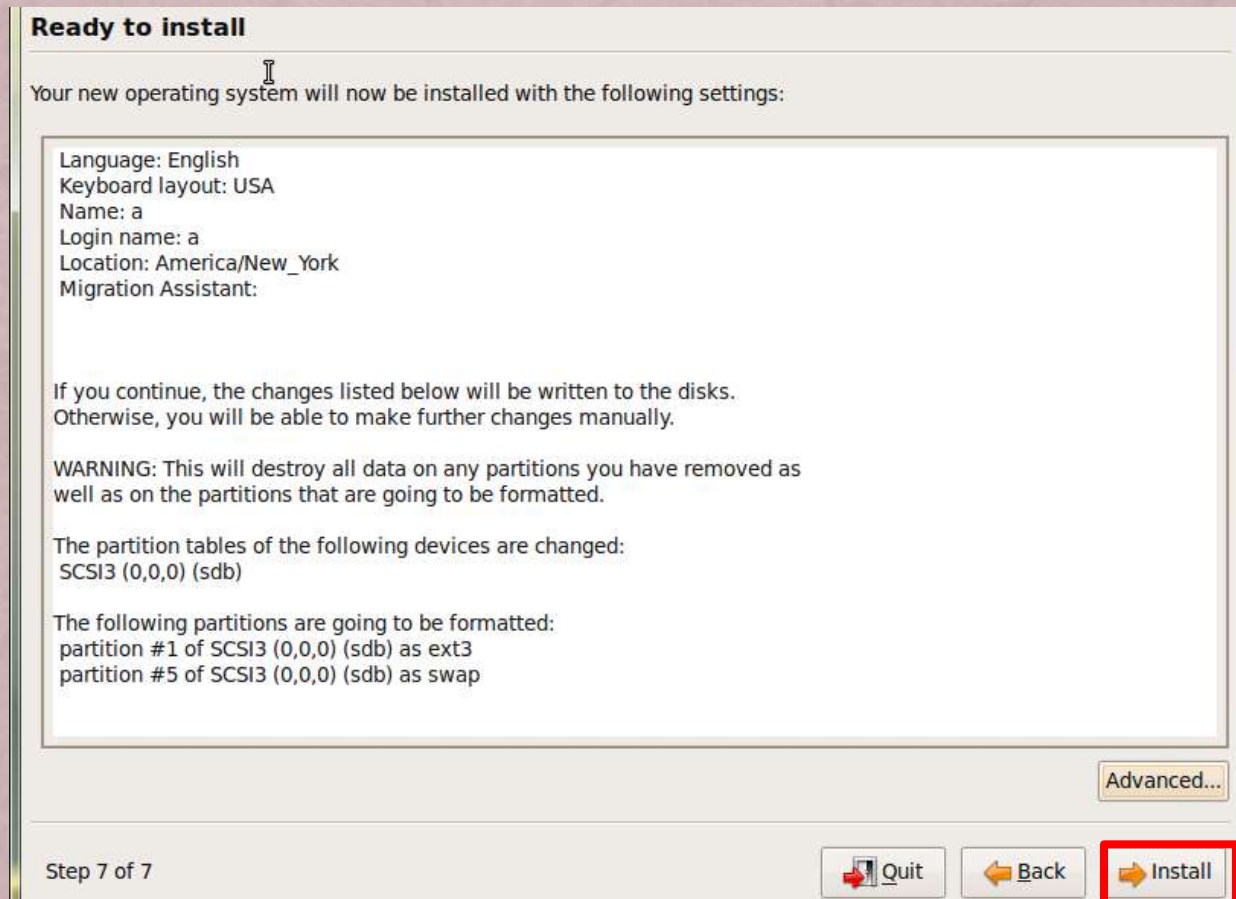
STEP25.

- + Click “install boot loader” and choose the USB raw disk



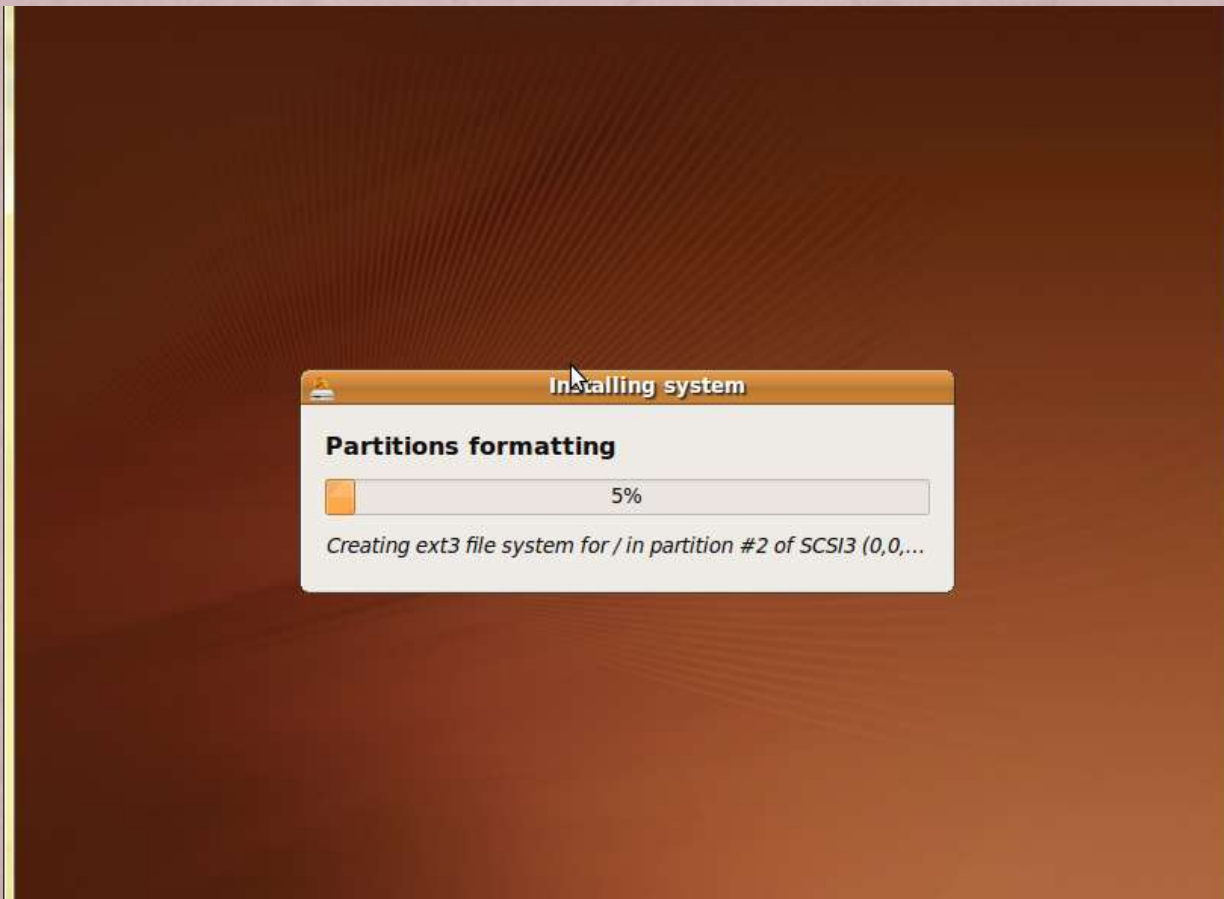
STEP 26.

+ Click “Install”



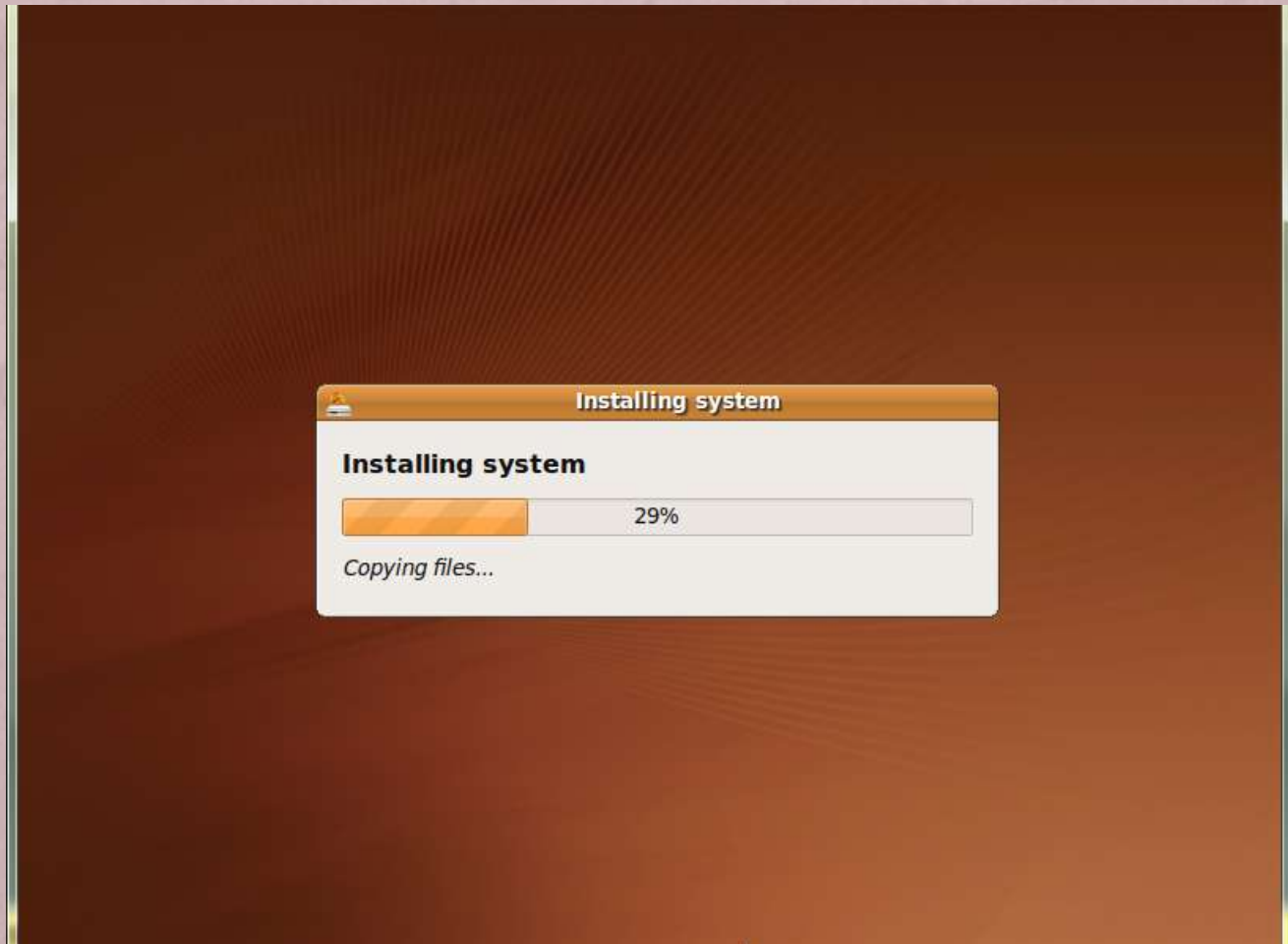
STEP27.

+ Partitions formatting



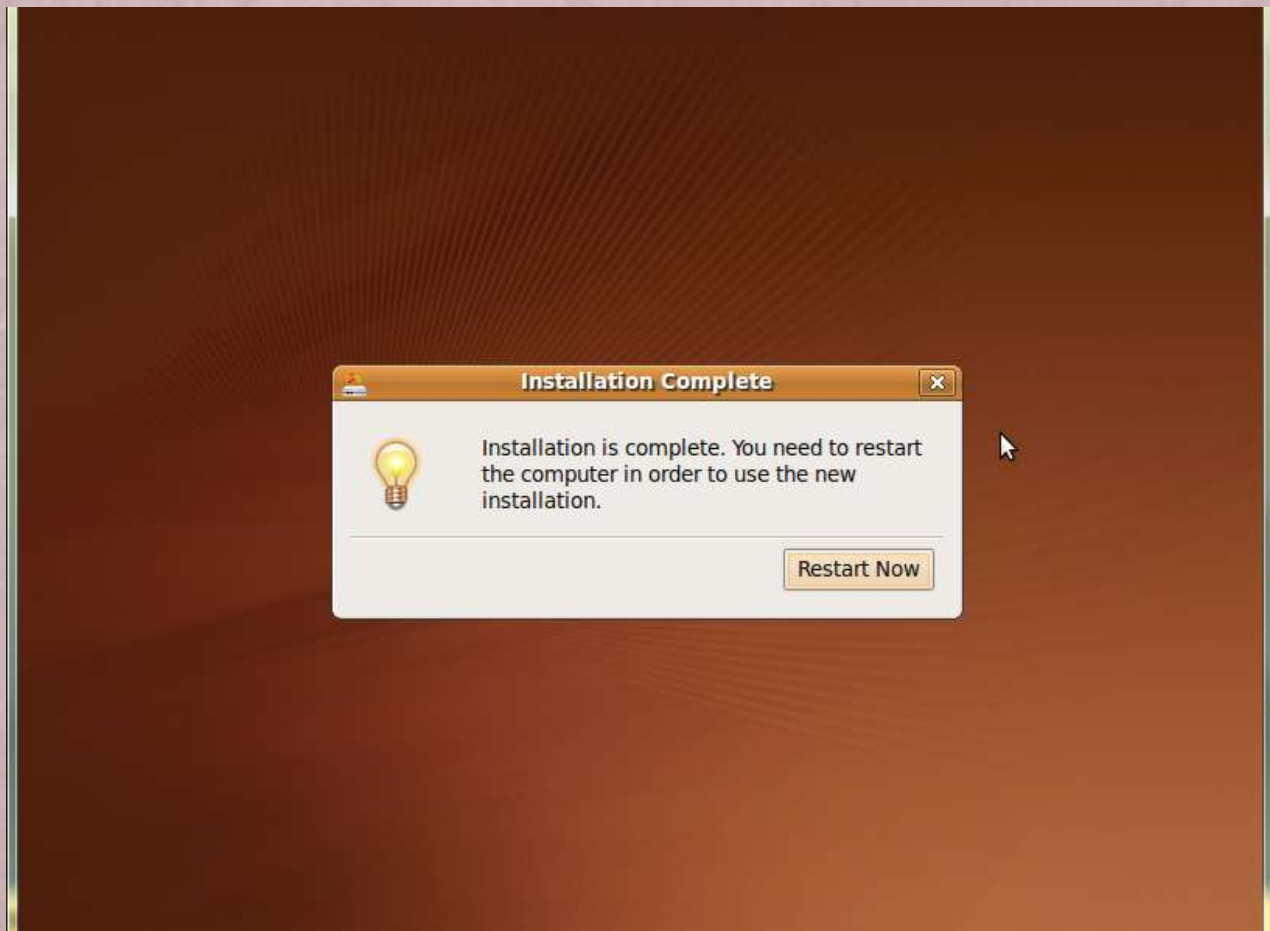
STEP28.

+ Installing system



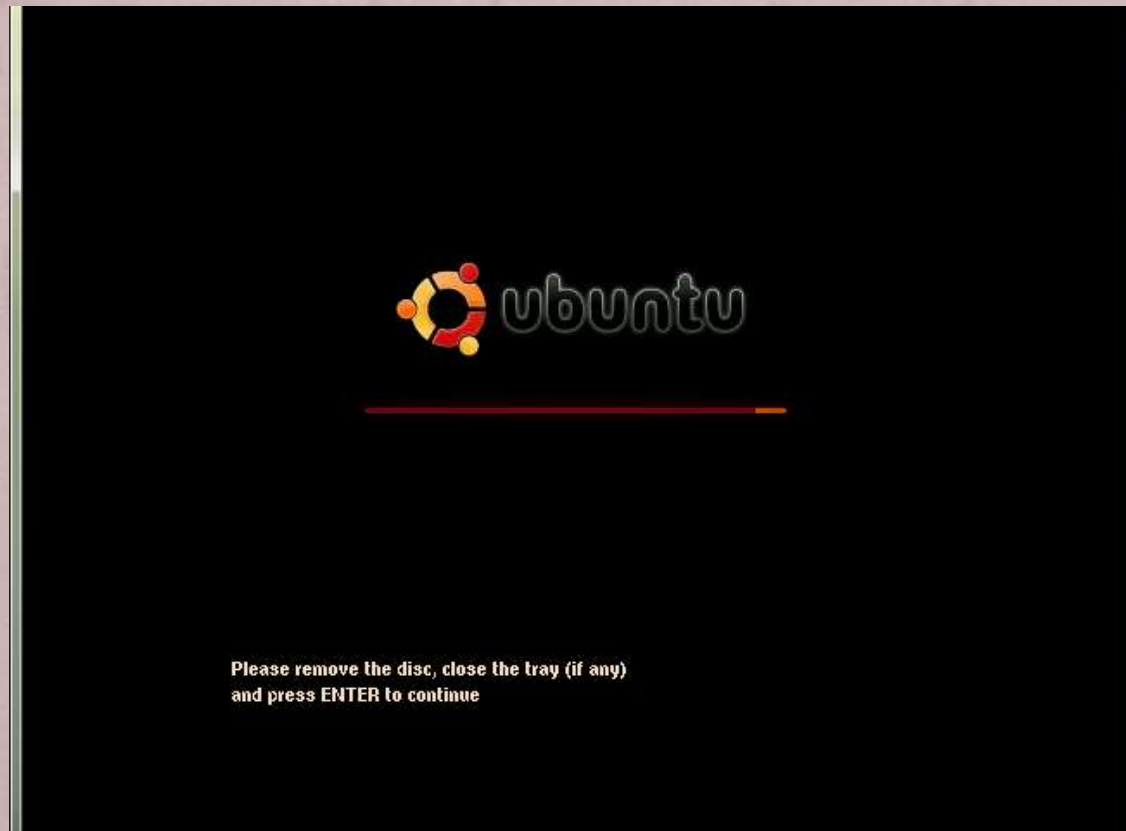
STEP29.

- + Click “Restart Now”



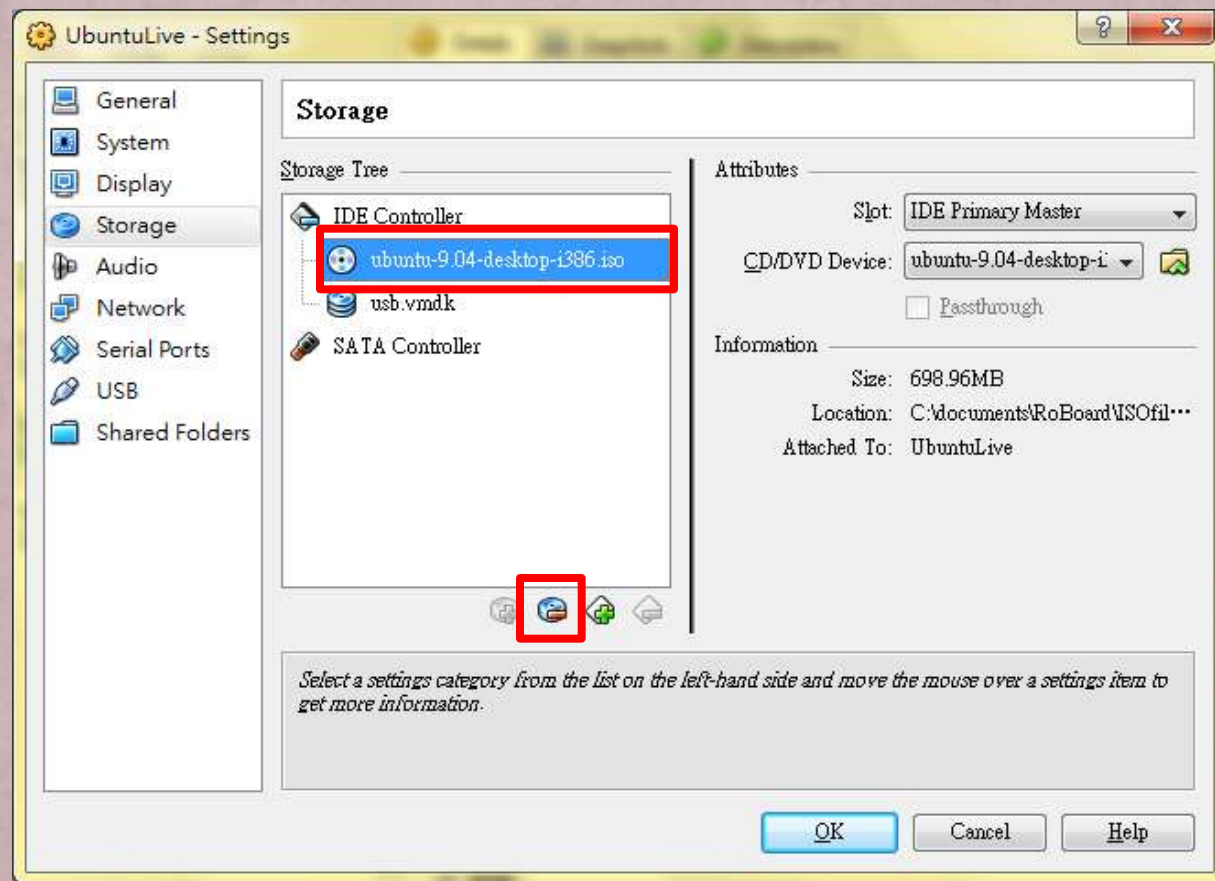
STEP30.

- + Press ENTER to continue
- + Then turn off the VirtualBox virtual machine



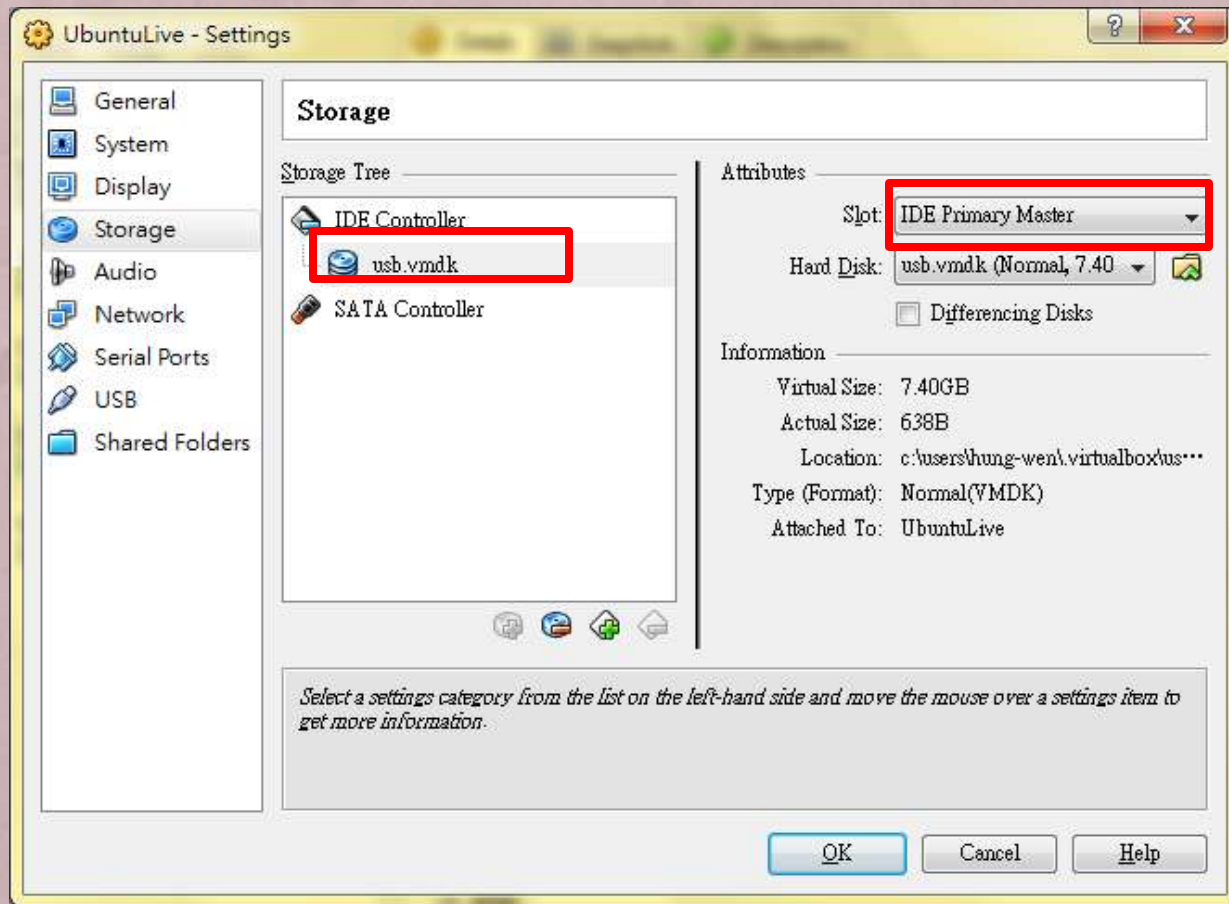
STEP 31.

- + Remove the Ubuntu 9.04 ISO file



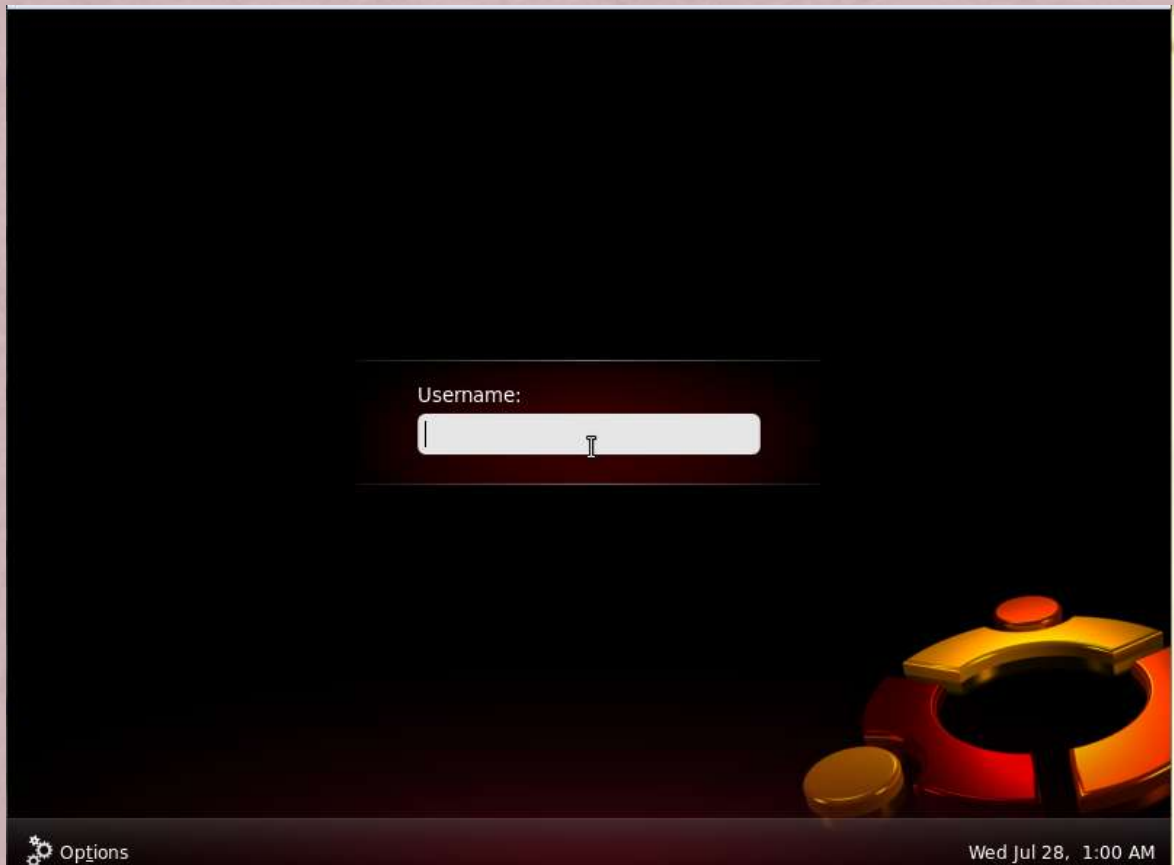
STEP 32.

- + Set the “usb.vmdk” as IDE Primary Master









STEP33.

- + Start the VirtualBox virtual machine again
 - You will boot into Ubuntu 9.0.4 GUI



STEP34.

- + In the virtual machine, download the RoBoard Linux kernel package from http://www.roboard.com/download_m1.htm

Windows CE 6.0 SDK	
RB-110 WinCE FTDI (FT2232H) COM Driver	
Linux	
RB-100/RB-110 Linux Kernel package 2.6.34.1 Aug 18, 2010	
RB-100/RB-110 Linux Kernel source 2.6.34.1 Aug 18, 2010	
RB-110 Linux FTDI (FT2232H) COM Driver	
BIOS	
RB-100	
RB-100 normal BIOS (ver. A5) (contact tech@roboard.com) July 20, 2010	
RB-100 special BIOS (ver. A5I_APM) for WinXP/Linux shutdown indicator (coming soon...)	

STEP35.

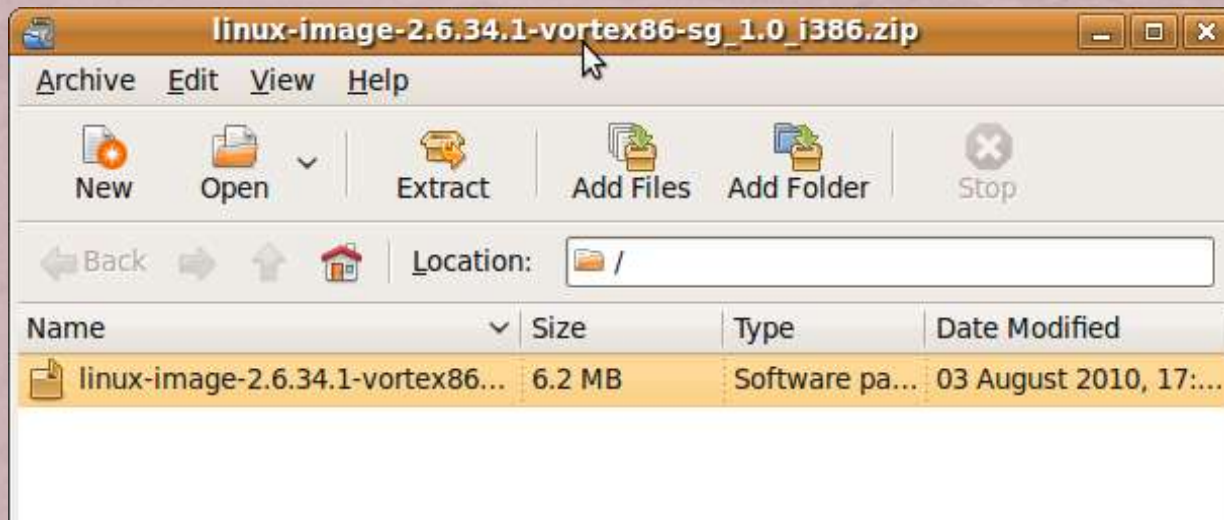
- + Extract the kernel package in Ubuntu

- In this example, the package is

linux-image-2.6.34.1-vortex86-sg_1.0_i386.zip

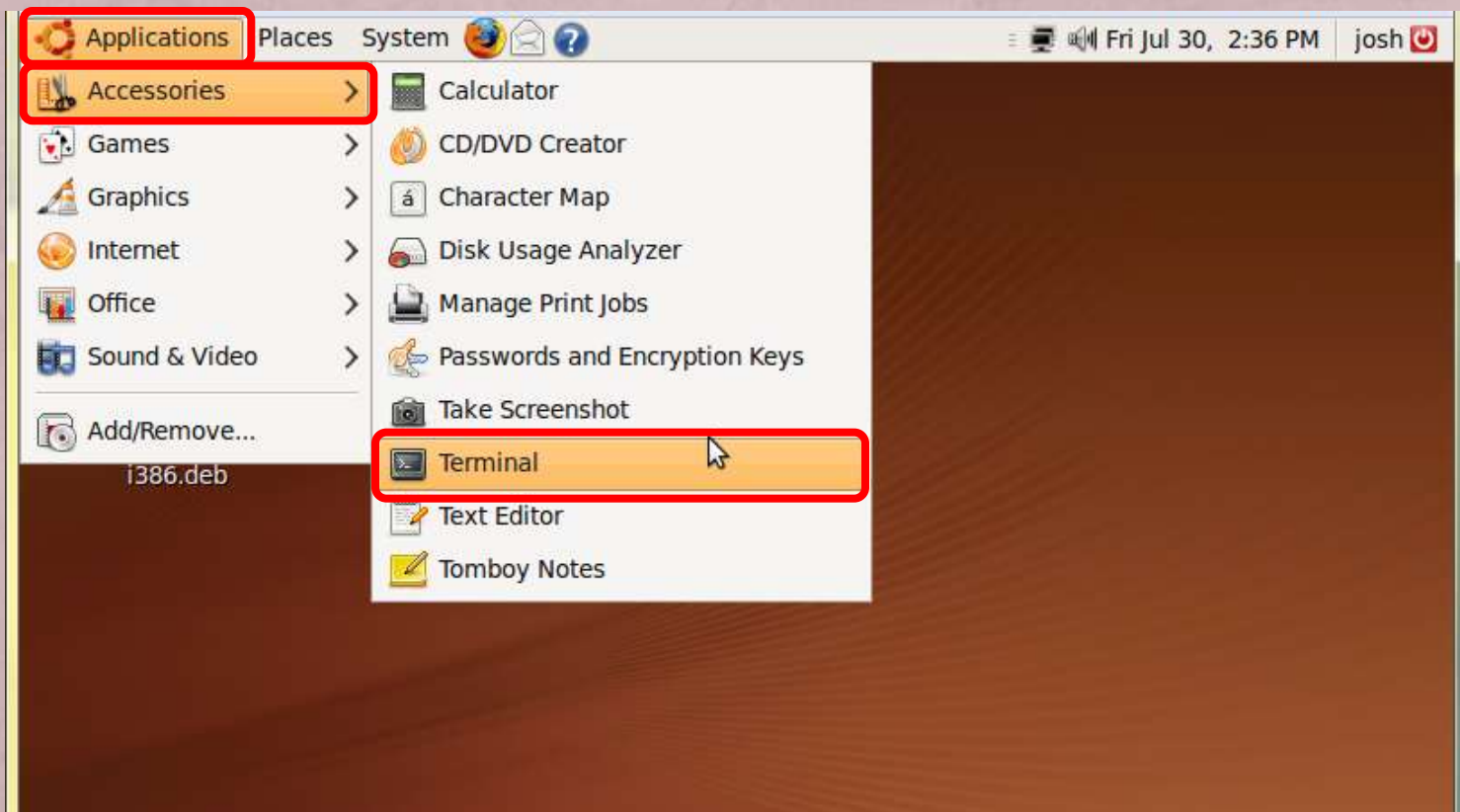
Extracting it, we get

linux-image-2.6.34.1-vortex86-sg_1.0_i386.deb



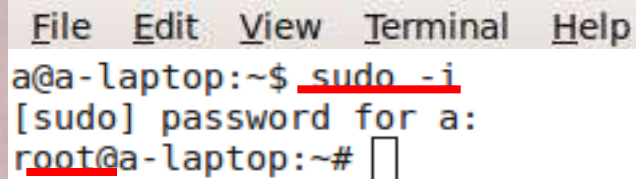
STEP 36.

- + Open a Terminal window



STEP37.

+ Type **sudo -i**



A terminal window with a menu bar at the top containing 'File', 'Edit', 'View', 'Terminal', and 'Help'. The terminal text shows a user 'a' at 'a-laptop' with a tilde prompt. They enter 'sudo -i', which is underlined in red. The prompt changes to '[sudo] password for a:'. After an invisible password entry, the prompt changes to 'root@a-laptop:~#' with 'root' underlined in red. A cursor is visible at the end of the line.

```
File Edit View Terminal Help
a@a-laptop:~$ sudo -i
[sudo] password for a:
root@a-laptop:~#
```


STEP38.

- + Type `dpkg -i <RoBoard Linux kernal package path>`
 - In this example, the path is
`/home/a/Desktop/linux-image-2.6.34.1-vortex86-sg_1.0_i386.deb`

```
File Edit View Terminal Help
a@a-laptop:~$ sudo -i
[sudo] password for a:
root@a-laptop:~# dpkg -i /home/a/Desktop/linux-image-2.6.34.1-vortex86-sg_1.0_i386.deb
Selecting previously deselected package linux-image-2.6.34.1-vortex86-sg.
(Reading database ... 102544 files and directories currently installed.)
Unpacking linux-image-2.6.34.1-vortex86-sg (from .../Desktop/2.6.34.1-vortex8
eb) ...
```



STEP39.

+ Type `update-initramfs -k 2.6.34.1-vortex86-sg -c`

```
Found kernel: /boot/vmlinuz-2.6.28-11-generic  
Found kernel: /boot/memtest86+.bin  
Replacing config file /var/run/grub/menu.lst with new version  
Updating /boot/grub/menu.lst ... done
```

```
root@a-laptop:~# update-initramfs -k 2.6.34.1-vortex86-sg -c
```

STEP40.

+ Type **update-grub**

```
root@a-laptop:~# update-initramfs -k 2.6.34.1-vortex86-sg -c
update-initramfs: Generating /boot/initrd.img-2.6.34.1-vortex86-sg

root@a-laptop:~#
root@a-laptop:~# update-grub
Searching for GRUB installation directory ... found: /boot/grub
Searching for default file ... found: /boot/grub/default
Testing for an existing GRUB menu.lst file ... found: /boot/grub/menu.lst
Searching for splash image ... none found, skipping ...
Found kernel: /boot/vmlinuz-2.6.34.1-vortex86-sg
Found kernel: /boot/vmlinuz-2.6.28-11-generic
Found kernel: /boot/memtest86+.bin
Replacing config file /var/run/grub/menu.lst with new version
Updating /boot/grub/menu.lst ... done
```

STEP41.

- + Type **poweroff**
- + Then turn off the VirtualBox virtual machine

```
Found kernel: /boot/vmlinuz-2.6.28-11-generic  
Found kernel: /boot/memtest86+.bin  
Replacing config file /var/run/grub/menu.lst with new version  
Updating /boot/grub/menu.lst ... done
```

```
root@a-laptop:~# poweroff
```


STEP42.

- + Remove the MicroSD card from the card reader
- + Plug the MicroSD card into your Roboard



STEP43.

- + Power on RoBoard, and then you will boot into Ubuntu 9.04



THANK YOU

tech@roboard.com
<http://www.roboard.com>