Linux Development Environment Description Based on VirtualBox Structure

V1.0

VirtualBox is open source virtual machine software. It mainly has three advantages: (1) Free (2) compact (3) powerful. At the same time it is simple to configure, easy to use.

This manual describes the installation of the VirtualBox virtual machine and the setting of installing Linux system and a set of shared files in VirtualBox.

1 VirtualBox installation

Prepare environmental, download VirtualBox virtual machine installation package to start installation.

(1) Double click VirtualBox-4.1.16-78094-Win.exe and Open installation interface. Referto figure 1-1:

Figure 1-1

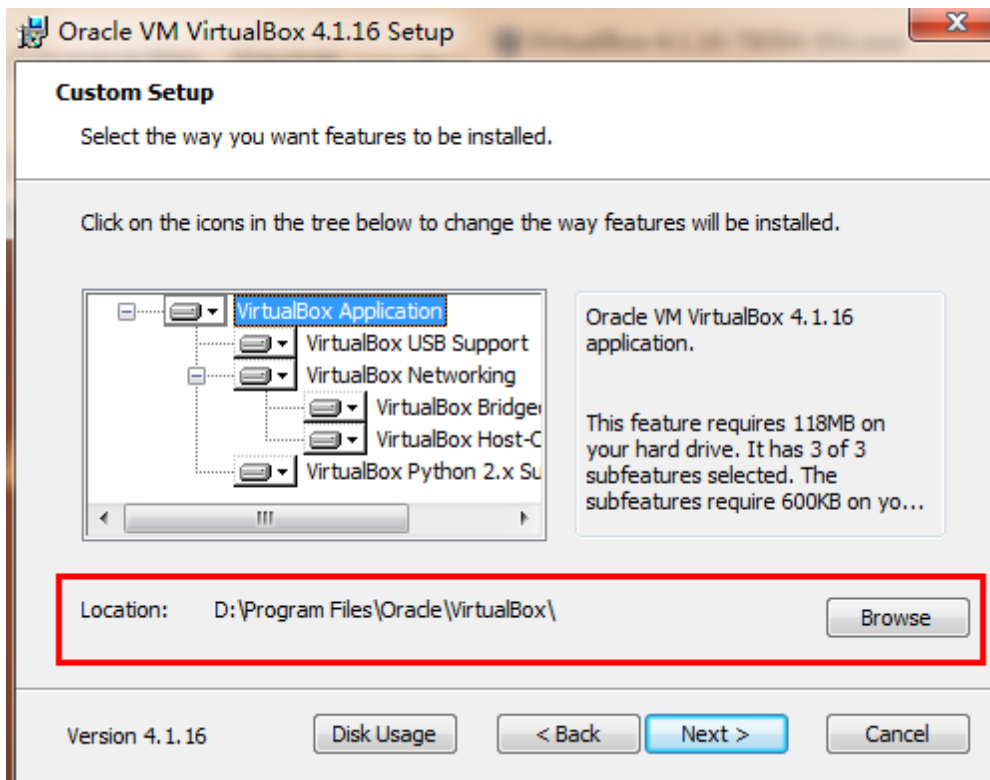(2) Select the installation path and VirtualBox application:

Figure 1-2

(3) Choose whether to create a desktop shortcut and click on "Next":
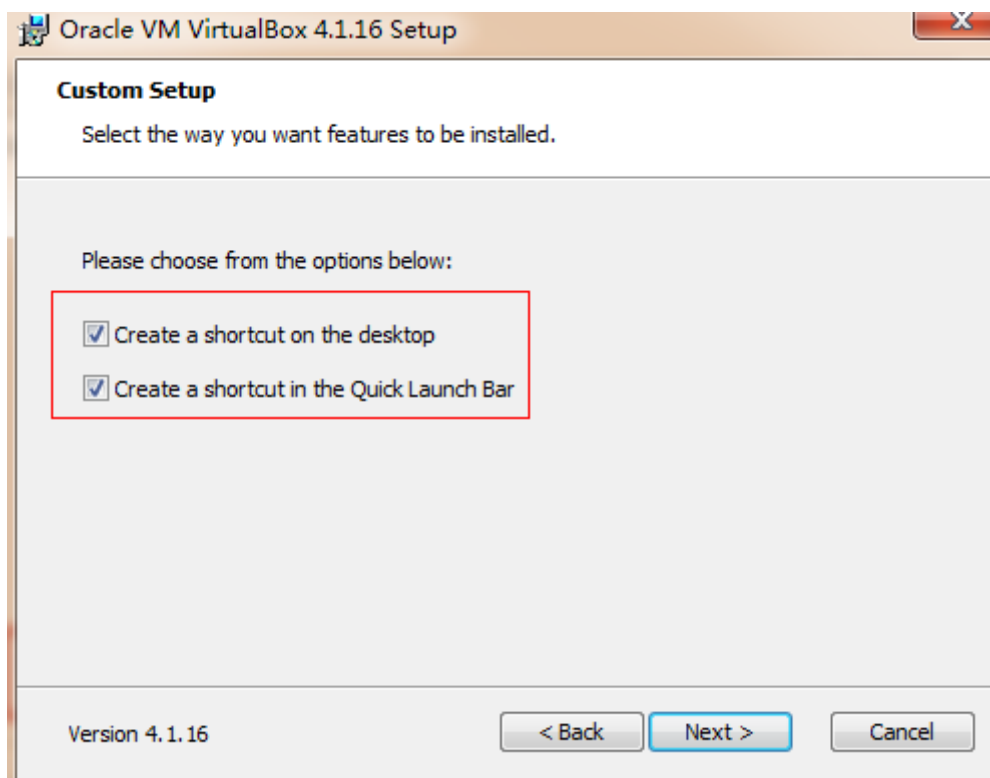

Figure 1-3

(4) Click "Yes" and then enter the next screen, click "Install" to begin virtual machine installation:
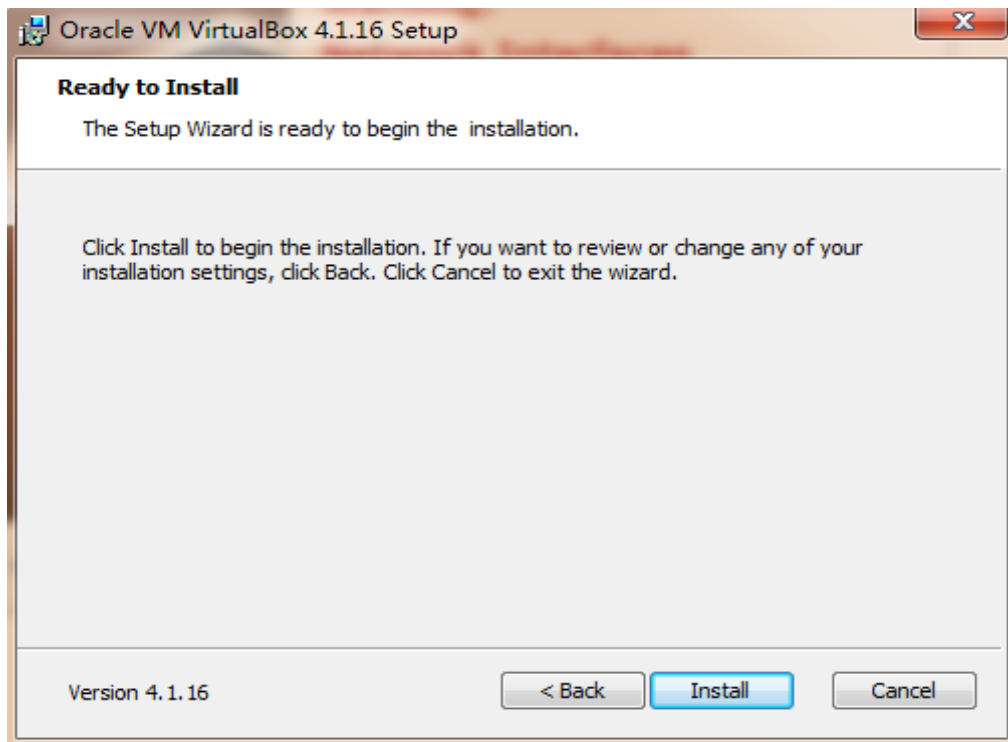
Figure 1-4

(5) Installation process may pop up prompt dialog box asking if install it. At this situation it is all choose to install. The following are some icons:
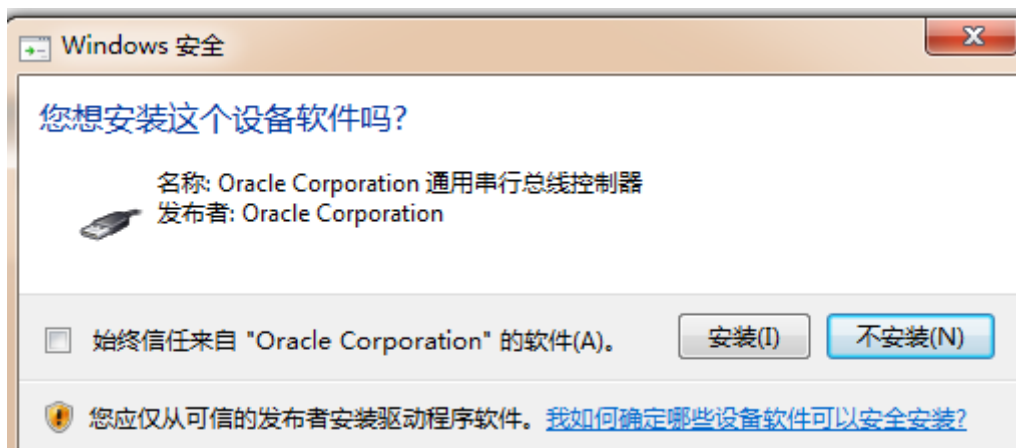

Figure1-5

Figure 1-6

Figure 1-7

(6) After the installation is completed, the interface is shown in figure 1-8:

Figure 1-8

Click "Finish" to complete the VirtualBox installation.

2 Creating a virtual machine

Open the VirtualBox software, there will be " new " , " set " , " start" , " clear four buttons in the menu.

(1) Click button "New" , select " Next " to begin to create a new virtual machine in the
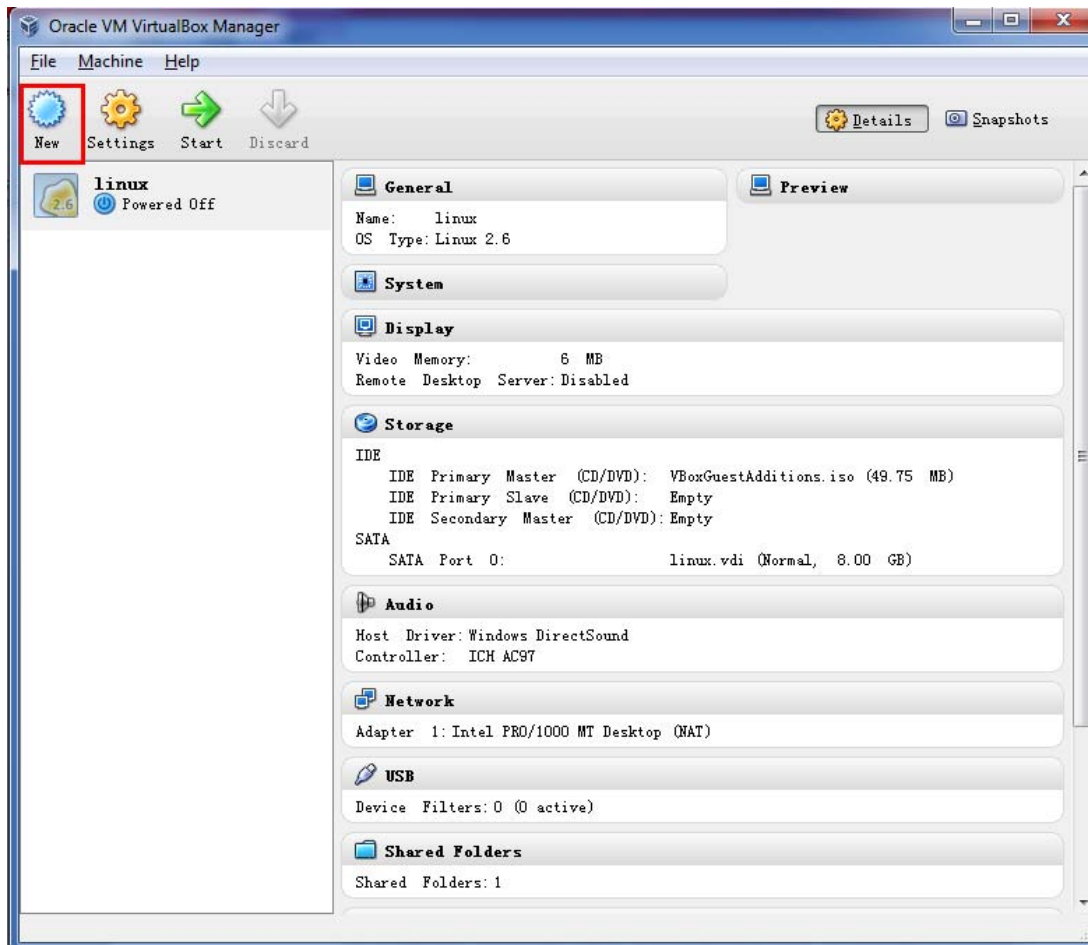
pop-up dialog box.

Figure 2-1

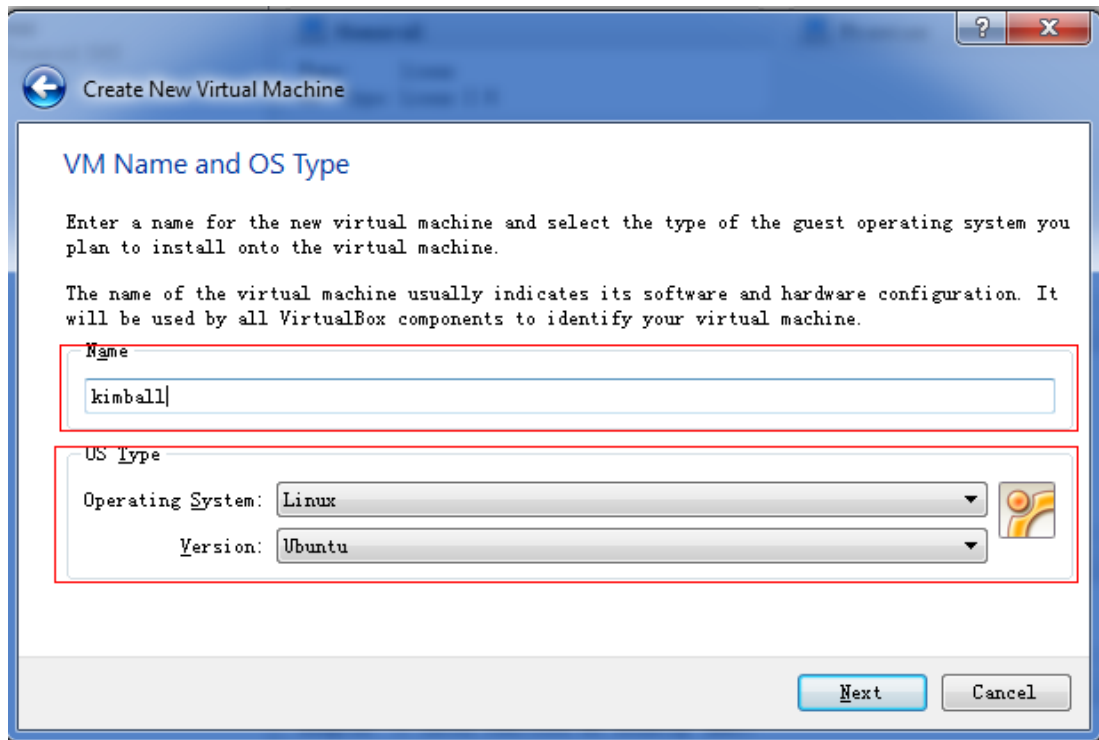(2) Input computer name and select operating system type:

Figure 2-2

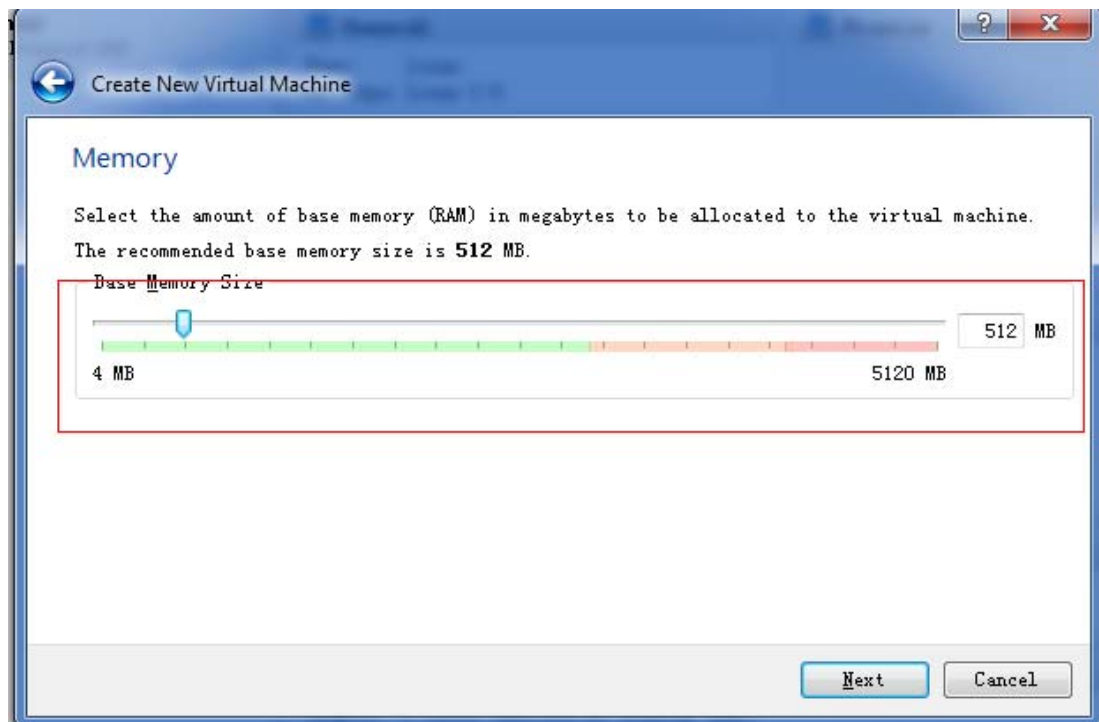(3) Configure virtual machine memory:

Figure 2-3
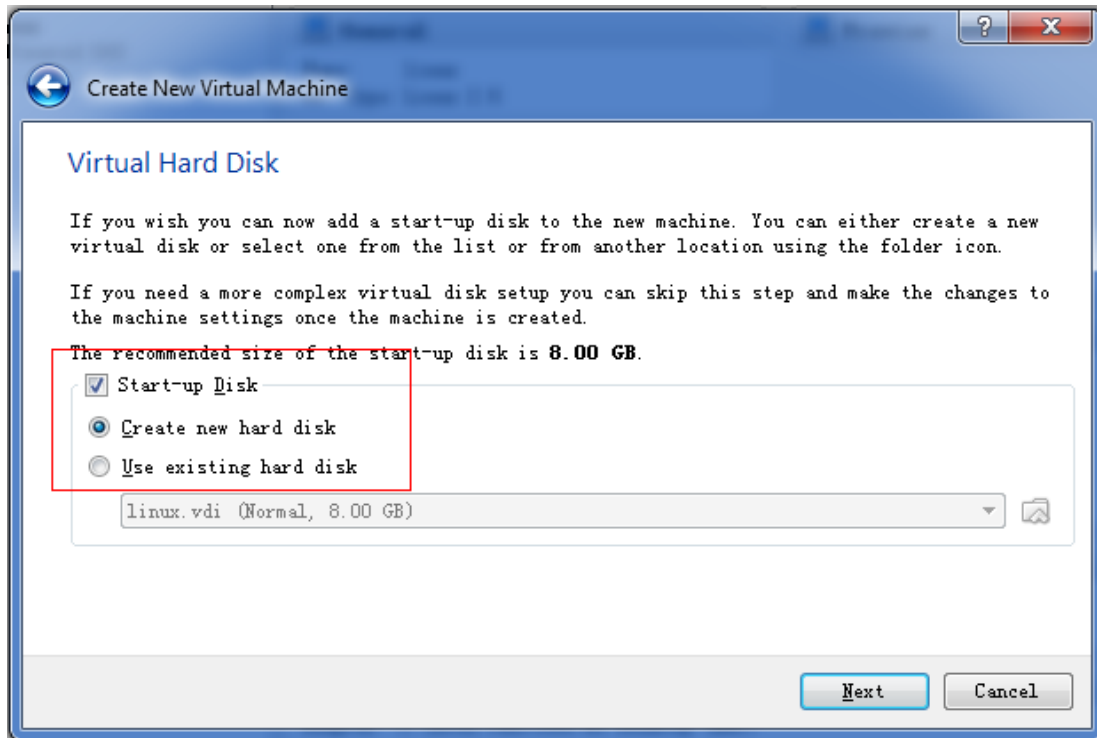
(4) Select to use virtual hard:

Figure 2-4

(5) Select file type and then select disk storage type. It is recommended to use dynamic allocation.
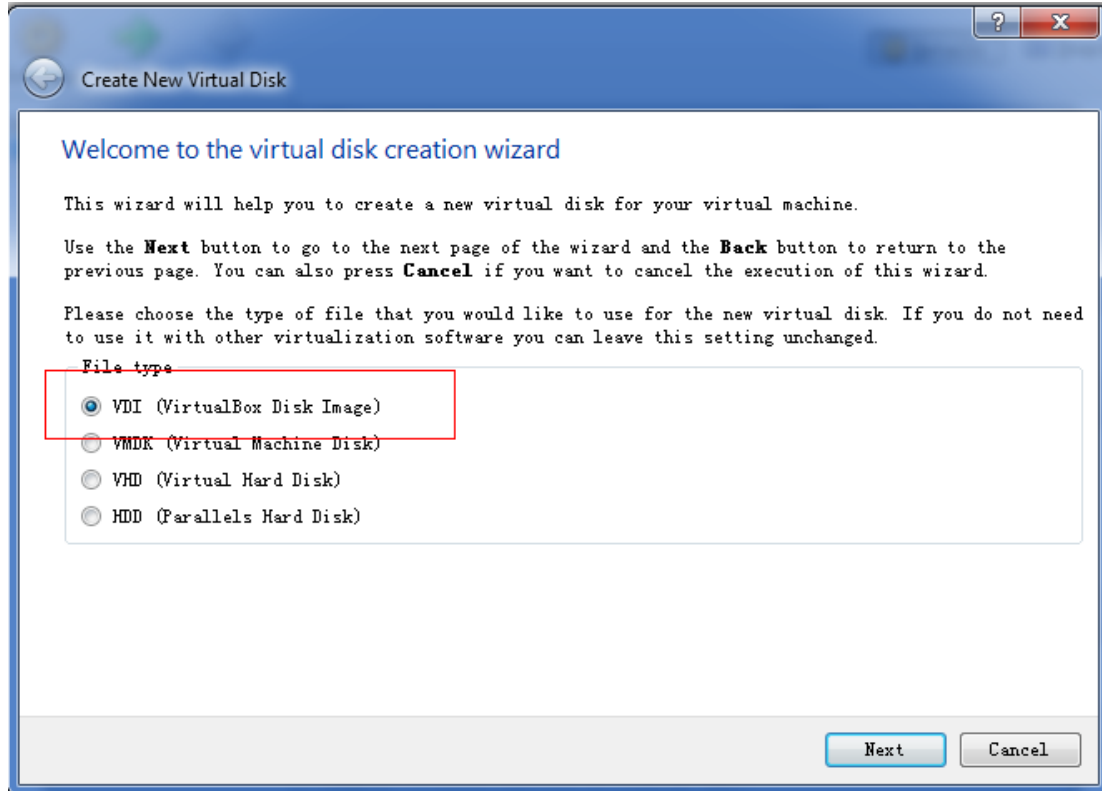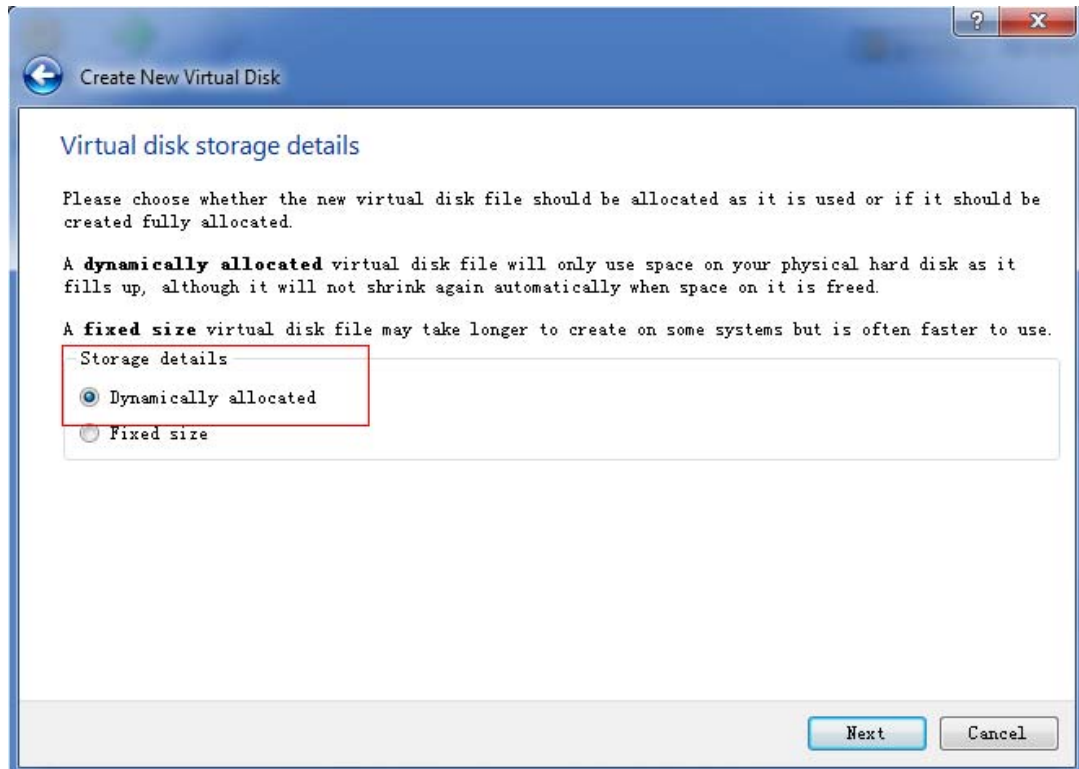

Figure2-5

Figure 2-6

(6) Set disk size, select " Next " and " created " in new pop-up dialog box:
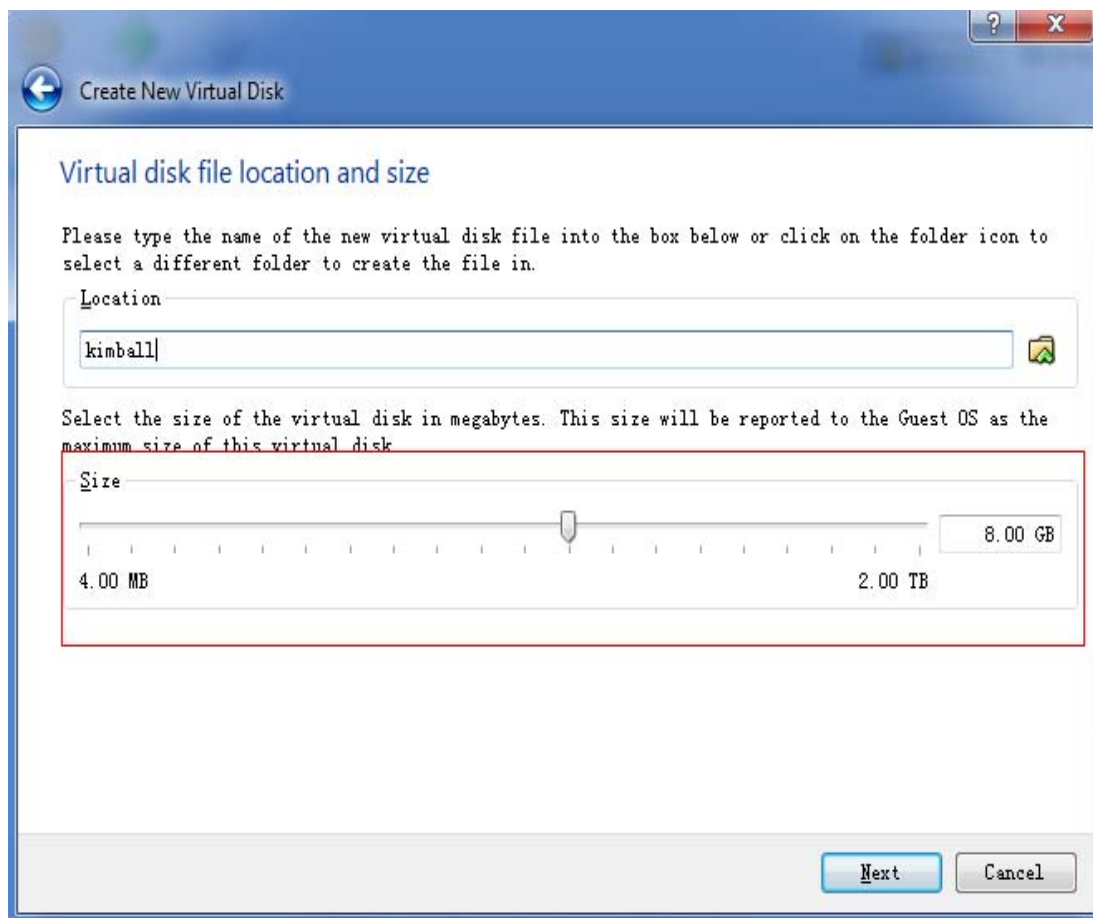
Figure 2-7

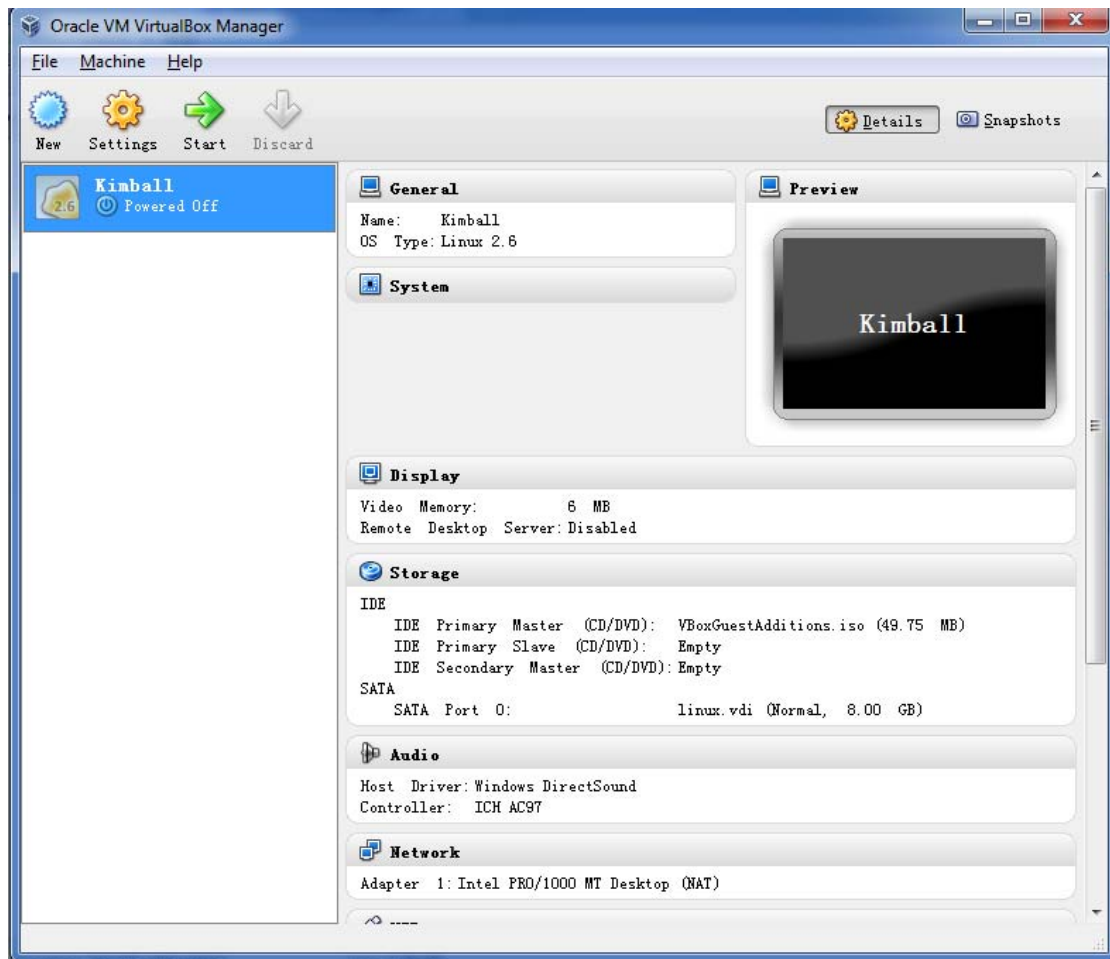(7) Create a virtual machine successfully. Refer to figure 2-8:

Figure 2-8

After the completion of virtual machine, click "settings", and then appears setup virtual machine interface. Refer to figure 2-9:
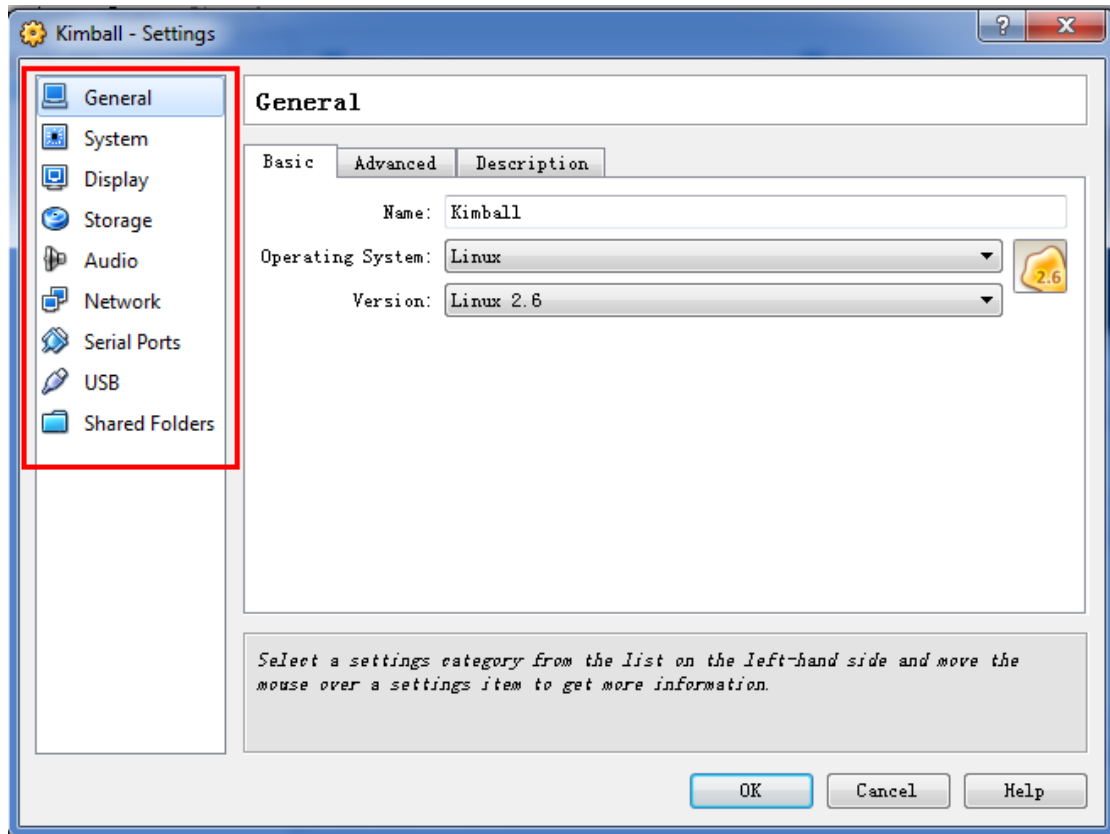
Figure 2-9

In addition to sharing file, other functions can be changed based on personal preferences habit, which is not specifically described. This sharing file will be described in detail below.

3 Install Linux System

(1) Ready Linux system image, click "Start" button to start created virtual machine, find "device" in start interface, select "CD-ROM distribution ", "choose a virtual CD-ROM" to add ready system image. Download ubuntu 10.04:

32-bit systems:

http://releases.ubuntu.com/lucid/ubuntu-10.04.4-desktop-i386.iso

64-bit systems:

http://releases.ubuntu.com/lucid/ubuntu-10.04.4-desktop-amd64.iso
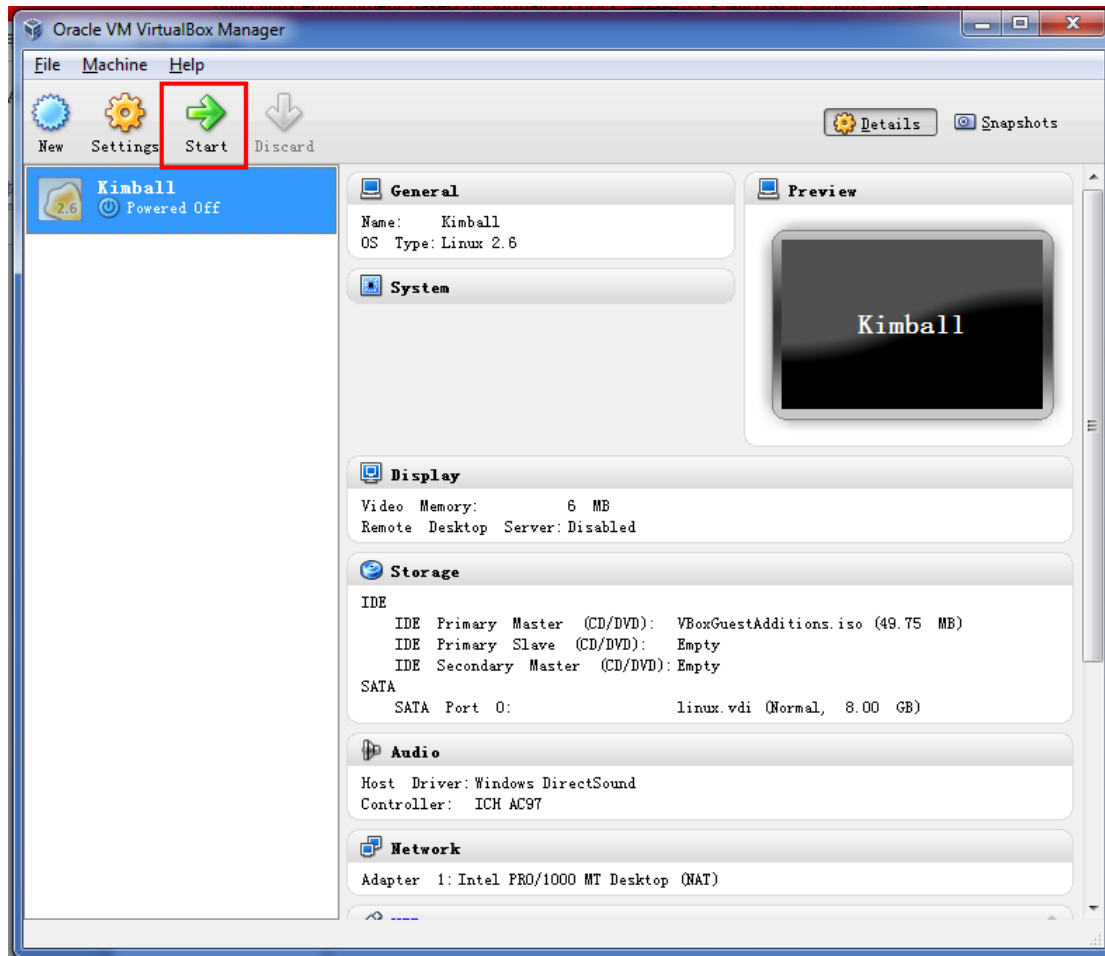
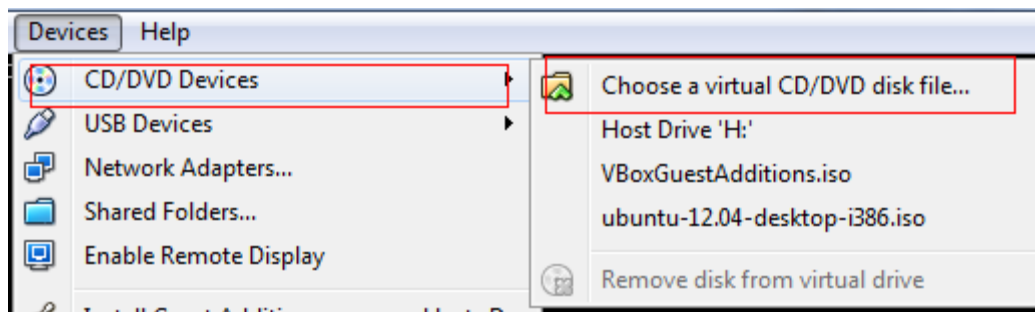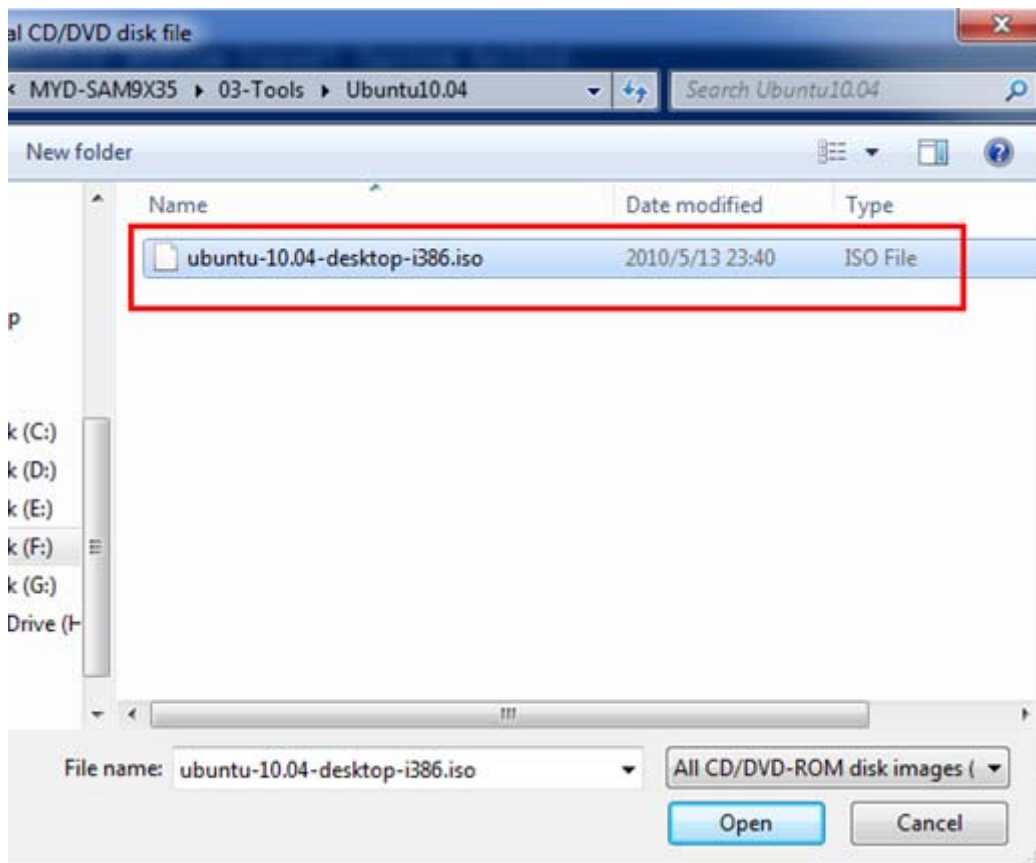Image download process is as follows:

Figure 3-1

Figure 3-2

Figure 3-3

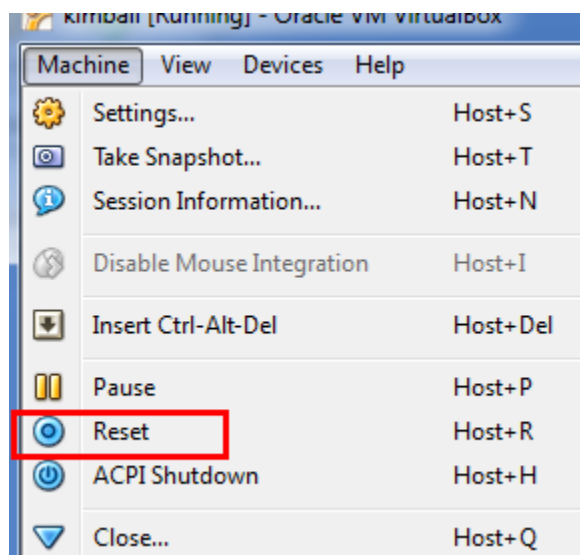(2) Add a mirror after restart virtual machine, the operation is as follows:

Figure 3-4

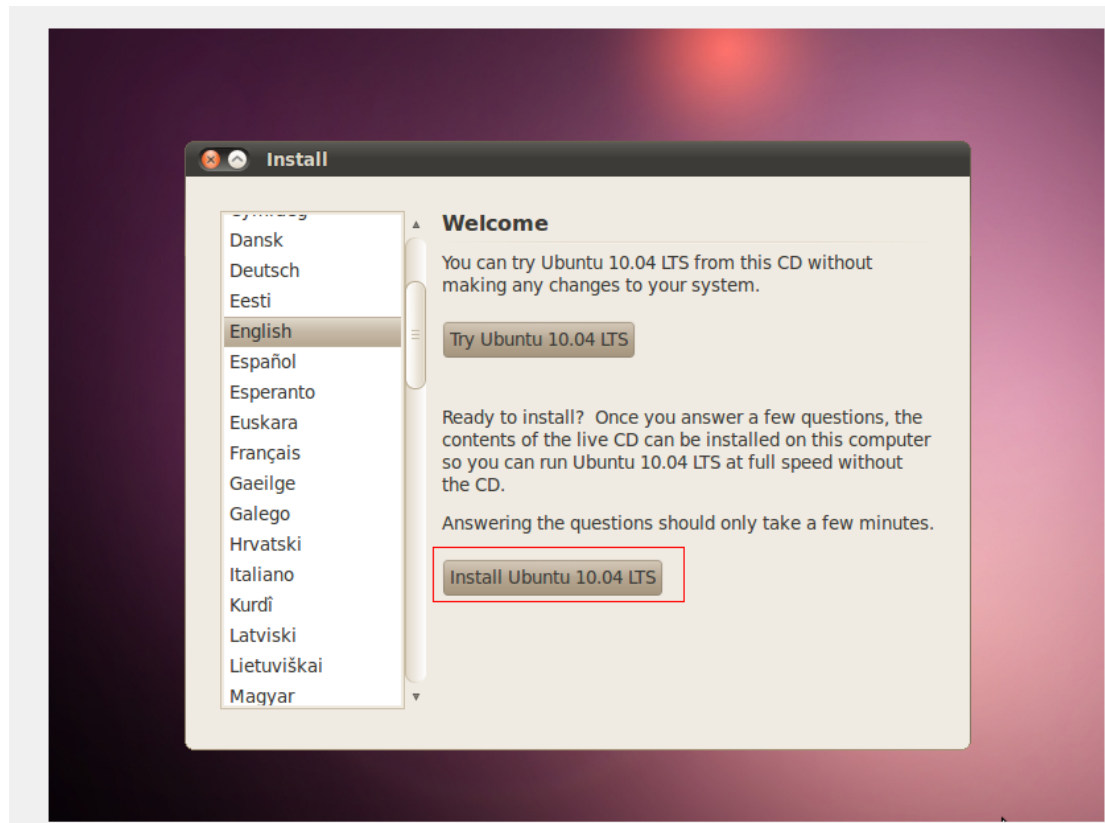(3) Start to install Linux system, select " Install ..." :

Figure 3-5

(4) Select the time zone and keyboard layout.

(5) Select the virtual hard disk partition, in general, it is to select the default system that is "Erase and use entire disk".
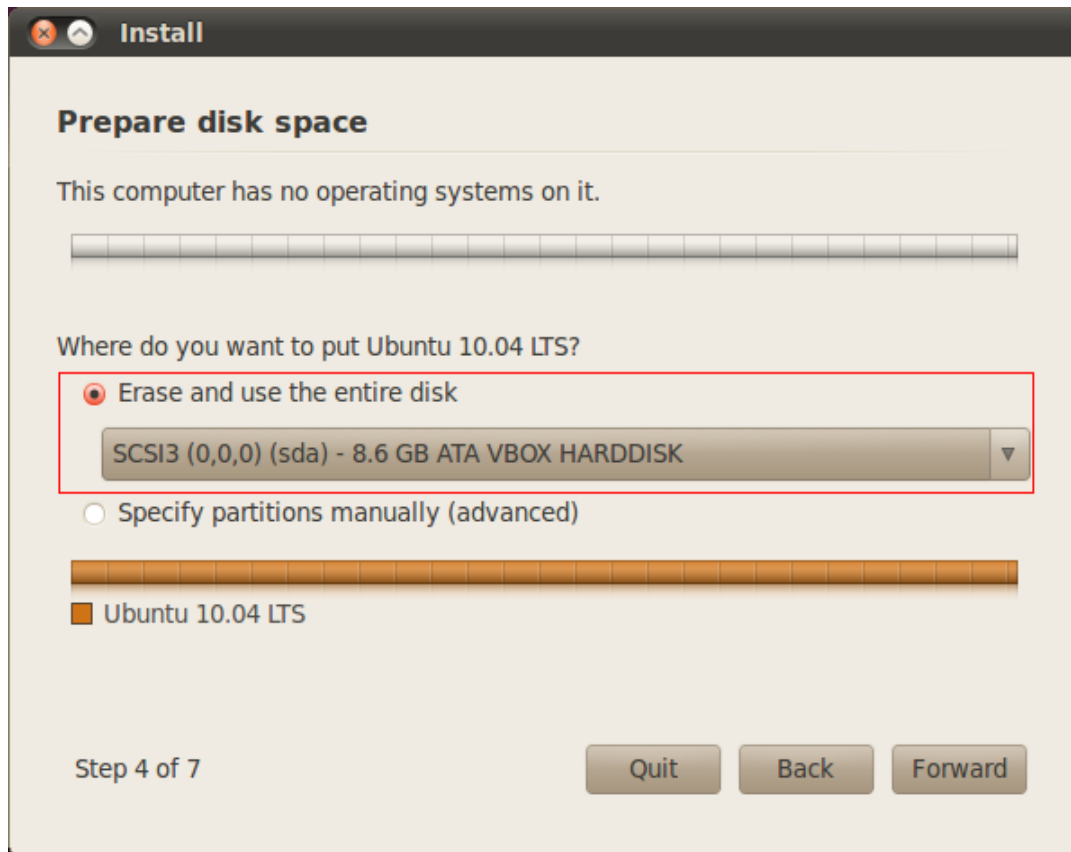
Figure 3-6

(6) Input computer name, password, and then confirm the installation. Refer to figure 3-7:

Figure 3-7

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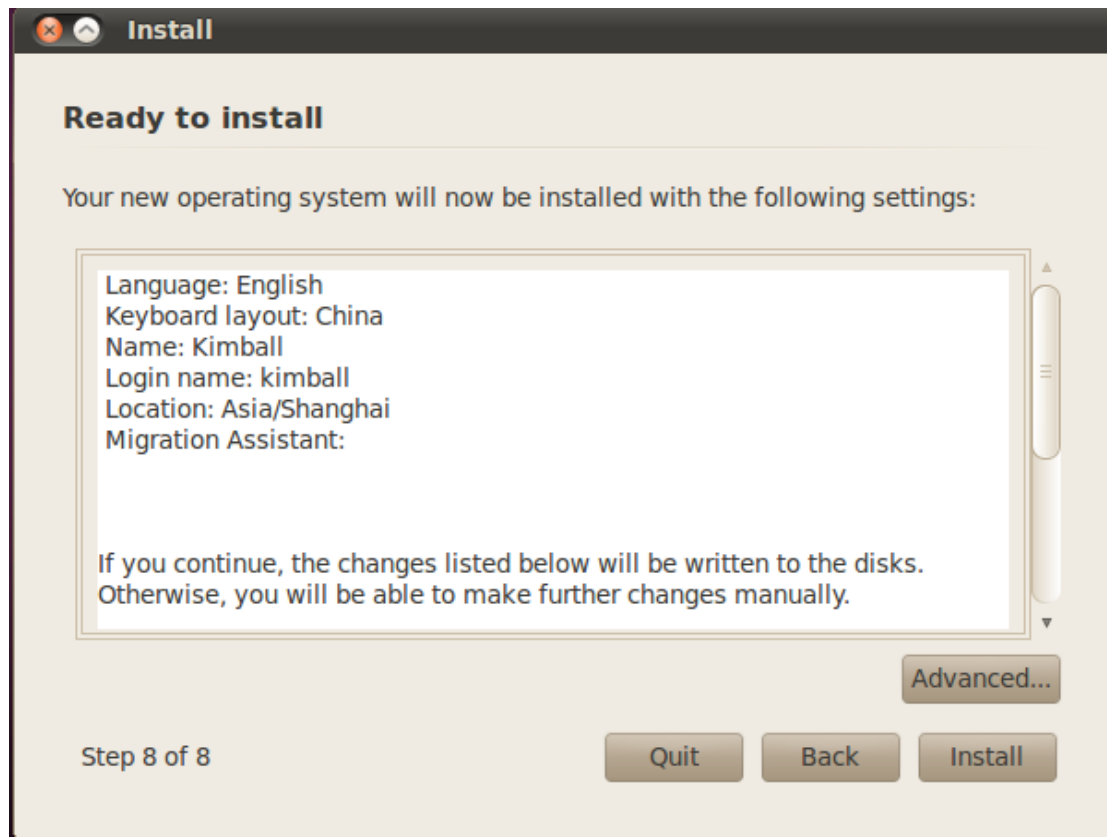
Figure 3-8

System begins to install automatically, then as long as installation is complete, and then select to restart it.

4 Shared file settings

4.1 VirtualBox system (recommended)

(1) Start virtual machine, and then choose to install enhancements. After the installation is complete, start next step configuration.

Figure 4-1

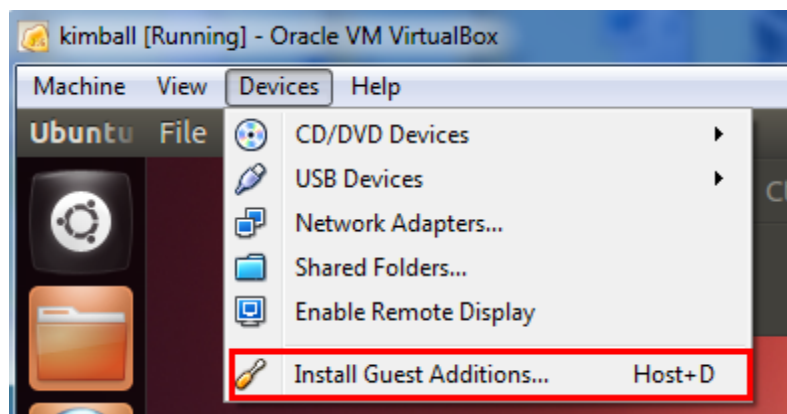(2) Choose "Settings - > shared folder, and then click" add shared folder. Refer to figure 4-2:
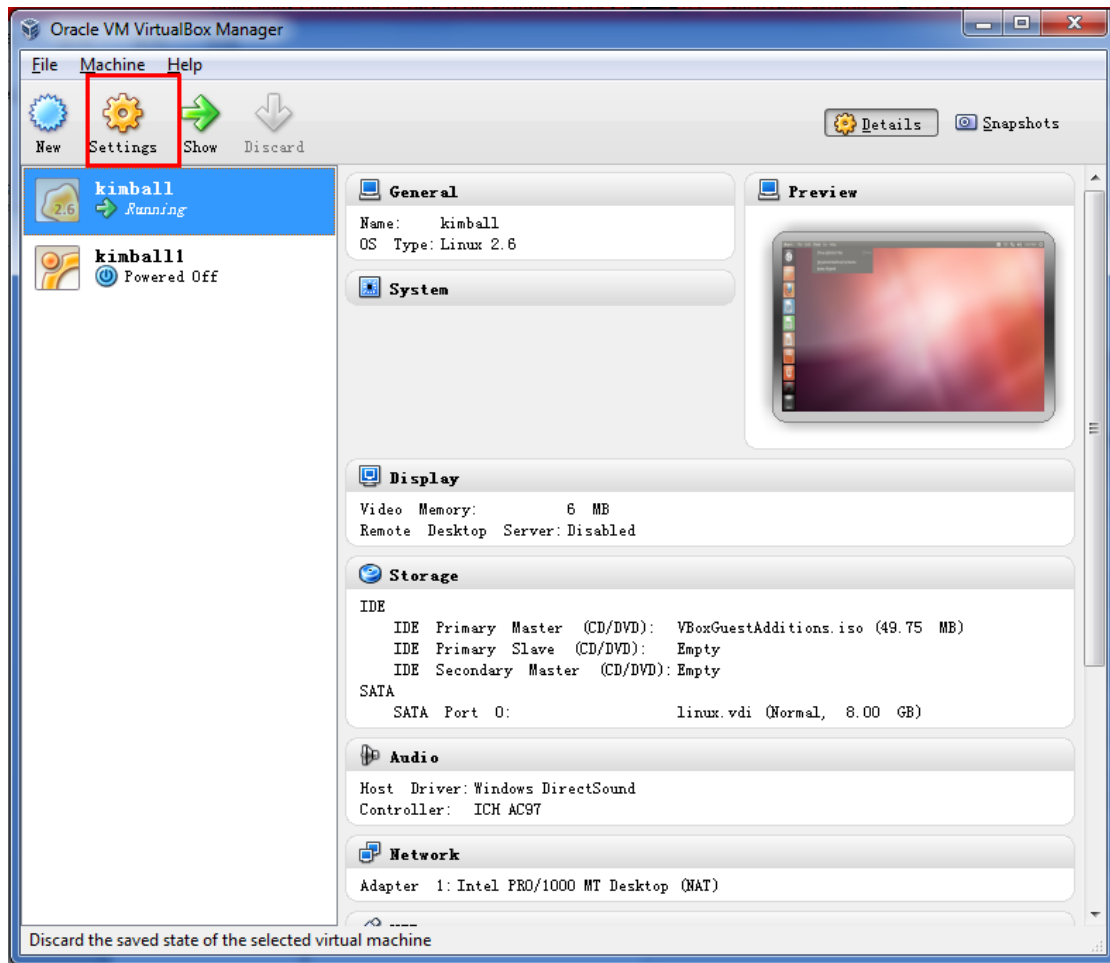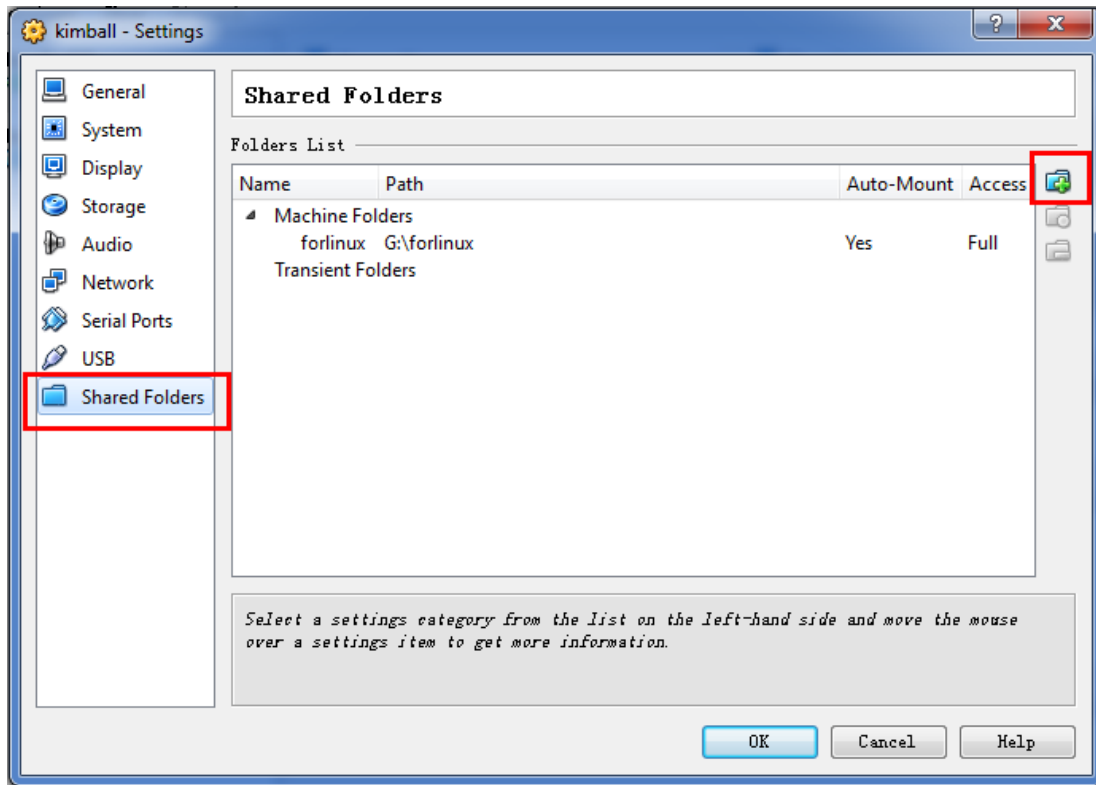

Figure 4-2

Figure 4-3

(3) Select the sharing file path, set it as "automatic" Mount ", the fixed allocation":
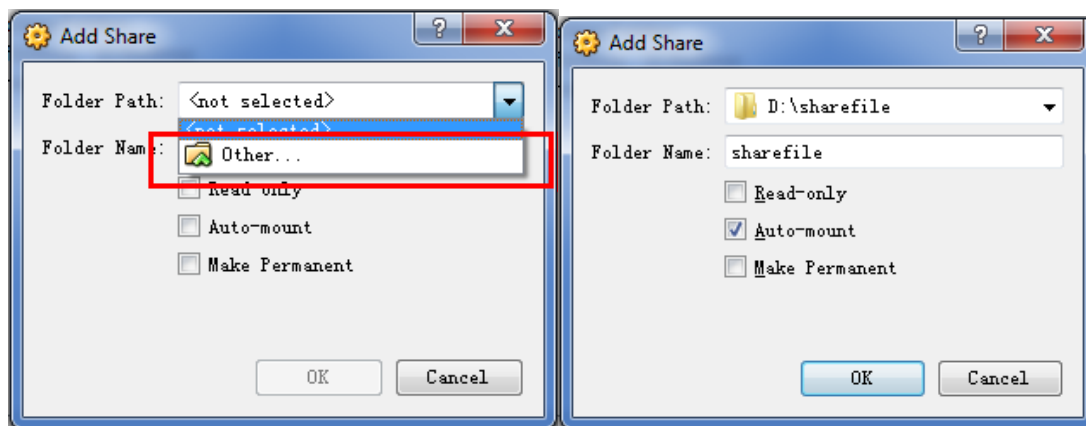

Figure 4-4

(4) After select "OK", setting interface displays name and shared folder path:
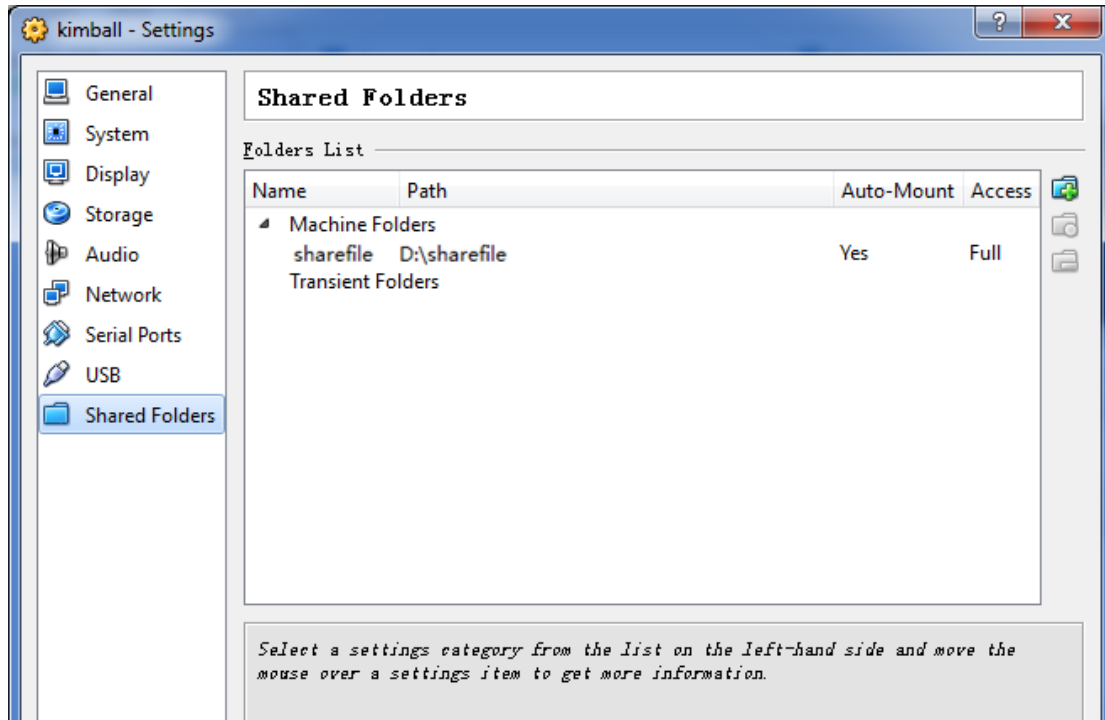
Figure 4-5

(5) After these steps, it has been completed Windows folder sharing setting. But it also needs user permissions to modify Linux system, the following concrete steps:

Firstly, switch to directory/media. As follows:

```
#cd /media
#ls -l
drwxrwx--- 1 root      vboxsf   4096 2012-08-15 11:44 sf_sharefile
dr-xr-xr-x 4 kimballkimball 2048 2012-05-22 21:08 VBOXADDITIONS_4.1.16_78094
```

See "sf_sharefile" folder in /Media director. The file folder sharefile is set in Windows, but it can't directly be accessed, so you need to add a native user to user group vboxsf.

The command is as follows:

```
#sudogpasswd -a kimballvboxsf
```

Note: kimball is native user name, the actual operation should be carried out by facts.

Log to access the shared folders sf_sharefile, the test results are as follows:

Figure 4-6

4.2 SAM-BA file sharing setting

Samba is a Linux system comes with a component, achieving the communication between the host windows and virtual machine Linux. The following detailed describes setup steps.

Network Setting

(1) Set virtual machine to double card. The card 1 is set to "NAT" mode, the card 2 is set to "Host-only" mode, as shown in figure 4-7:
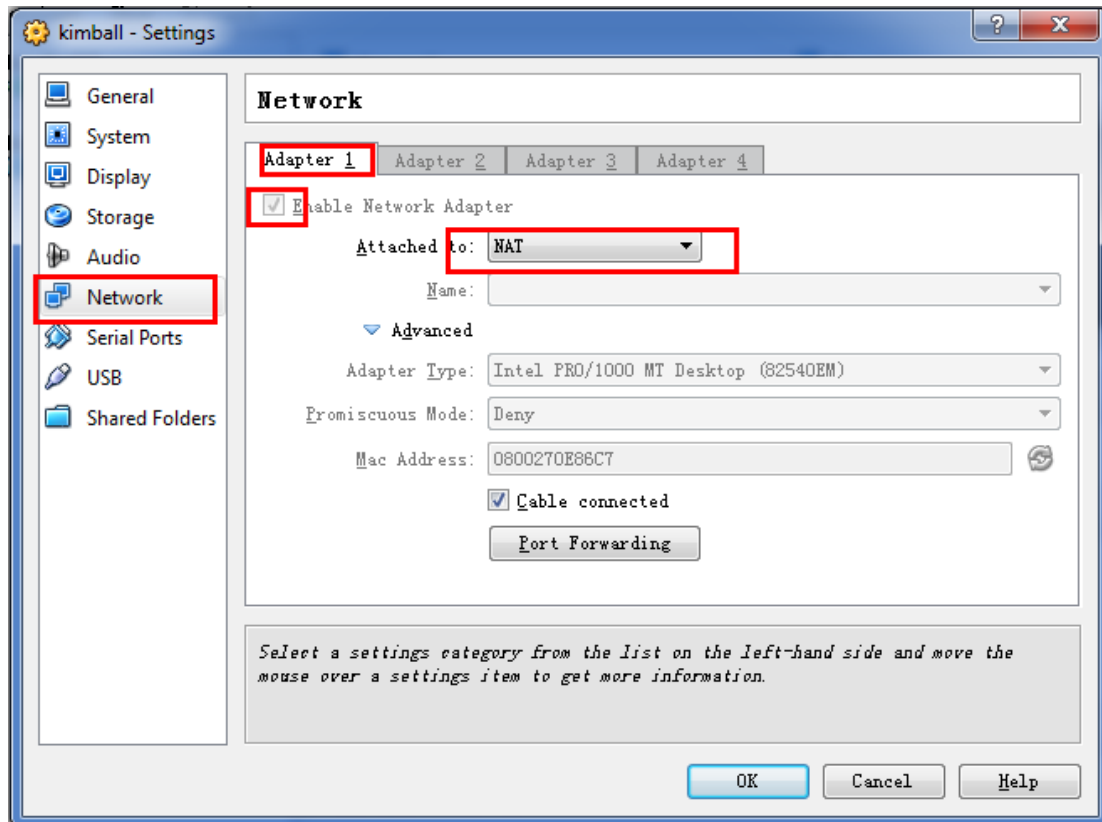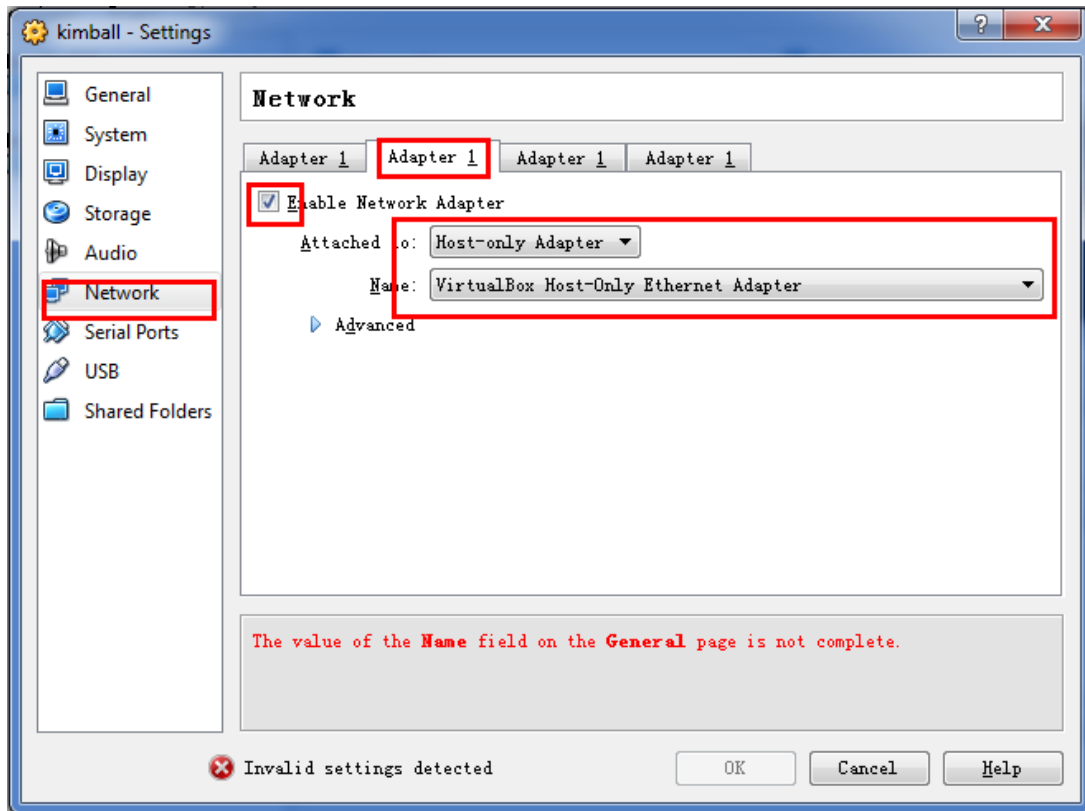

Figure 4-7

Figure 4-8

(2) Check whether the network is set up successfully.

Input "ifconfig" in virtual machine terminal to view virtual machine IP firstly, and then input "ping www.baidu.com" to test, the result is shown in figure 4-7:

Figure 4-7

Type "ping 192.168.56.102" in Windows Terminal (Note: "192.168.56.102" is virtual machine IP which is checked by "ifconfig").
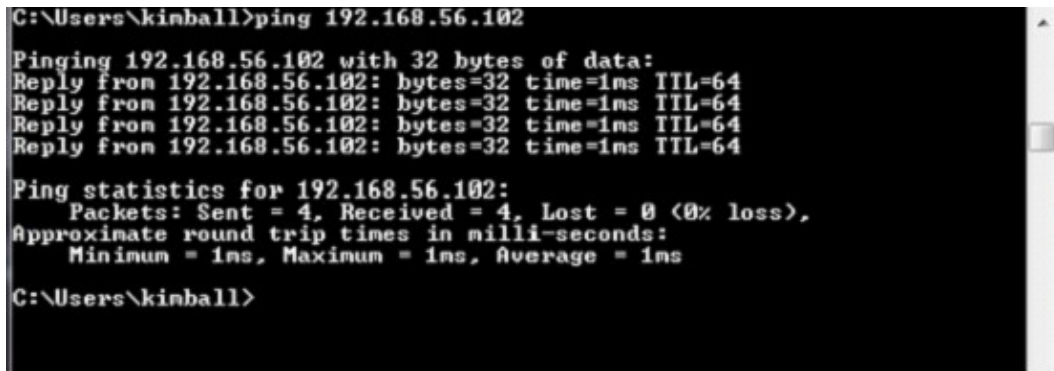
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Figure 4-8

Set samba

(1) Install amba

#sudo apt-get install samba
#sudo apt-get installsmbfs

(2) Install shared module of system settings

#sudo apt-get installkdenetwork-filesharing

(3) Create a shared directory

#mkdirshare   (Create a folder in the current user which is kimball)

(4) Modify the permissions of shared directory

#chmod 777share

The directory is set to everyone can read and write

(5) For security reasons, backup smb.conf firstly

#sudocp   /etc/samba/smb.conf   /etc/samba/smb.conf_backup

(6) Start to configure smb.conf

Use the editor to open the configuration file

#sudo   vim   /etc/samba/smb.conf

Make the following changes in the [global] section:

workgroup = WORKGROUP
netbios name = kimball
server string = Linux Samba Server TestServer
security = share
[share]
      path = /home/kimball/share
      writeable = yes
      browseable = yes
      guest ok = yes

The following analysis the related command parameters.

[global] is the global configuration, so it is must be written. **Workgroup** is displayed

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in Windows work group and **netbios name** is displayed in Windows. **server string** is Samba Server description which can be defined by your own. **security** which is authentication and login, here using the share and there are a variety of authentication methods. This is one of them, another is common user verification. If you use share would not have set user and password to log in; **[share]** is displayed in Windows shared directory. **path** can be set to \directory you want to share, here is set to "/home/Kimball/share". Whether **writeable** can be written, it can be set to write here. **Browseable is** whether visible, **guestok** anonymous user is logged as **guest**.

(7) samba configuration is completed, save and exit. Then start samba, and check whether samba service conform the requirements.

```
#sudoservice smbd start
#testparm
```

The following information is said to have been configured correctly.

```
kimball@kimball-laptop:~$ sudo service smbd start
smbd start/running, process 1573
kimball@kimball-laptop:~$ testparm
Load smbconfig files from /etc/samba/smb.conf
rlimit_max: rlimit_max (1024) below minimum Windows limit (16384)
Processing section "[share]"
…..
Processing section "[printers]"
Processing section "[print$]"
Loaded services file OK.
Server role: ROLE_STANDALONE
Press enter to Referto a dump of your service definitions
```

(8) Restart samba and view the IP address.

```
#sudoservicesmbd restart
#ifconfig
```

The IP address is displaied as shown in figure 4-7.

Note: selectting eth1 is that eth2 is "Host-only" mode in the previous step.

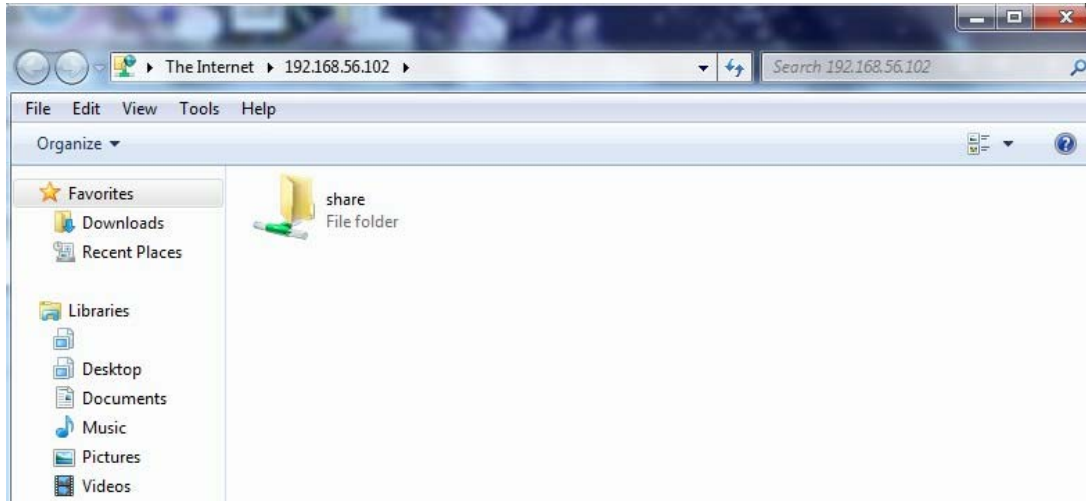(9) Input string "\\192.168.56.102" to open page. Refer to figure 4-9:

Figure 4-9

At this point, SAMBA sharing settings are completed.