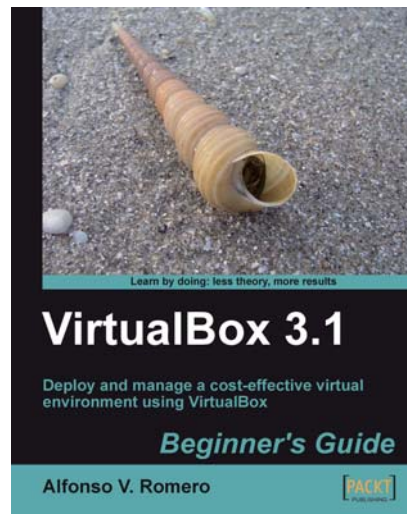




VirtualBox 3.1: Beginner's Guide

Alfonso V. Romero



Chapter No.1 "Getting to Work with VirtualBox"

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In this package, you will find:

A Biography of the author of the book

A preview chapter from the book, Chapter NO.1 "Getting to Work with VirtualBox"

A synopsis of the book's content

Information on where to buy this book

About the Author

Alfonso V. Romero has been working with Linux and open source software since 1999, when he started operating his first web server (Apache) from a PC at home. Since then he's been working for several clients in Mexico as a Java, C++, and web applications developer. He also works for Pearson Education in Mexico as a Computer Books Freelance Translator and Consultant. When he's not experimenting with new trends in open source and .NET applications, he enjoys spending some quality time with his beautiful wife, three kids, and three dogs, or playing his old electric Ibanez guitar.

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He's also a big fan of Stephen King, and one of his maximum aspirations is to write a fiction novel, but his passion for computers and information technology keeps him busy as a technical writer.

To God, without whom I'd never be where I am now...

To Adelina my wife, the love of my life. I cannot thank you enough for your patience, love, encouragement, and support that kept me going no matter what happened along the way... I love you very, very much! My heart will always be yours!

To my two daughters Adelina and Arlae, and to my son Alfonso Jr., because every time I got writer's block they always managed to cheer me up with a smile, a kiss, or a hug... I love you infinitely, guys! Finally I'm going to be able to spend quality time with you in the park!

To my mother Estela, my father Alfonso, my brother Richard, and my sister Lucy, for their unconditional support, and for showing me that patience, perseverance, and stubbornness will always help you achieve whatever you're up to.

To Sarah, Pallabi, Shubhanjan, Reshma, and all the staff at Packt Publishing for being such a great support team.

To the VirtualBox team, for developing such a great product!

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VirtualBox 3.1: Beginner's Guide

The furore around virtualization is taking the technology world by storm and is a must for efficient utilization of network server capacity, storage administration, energy, and capital. VirtualBox is free which brings down your upfront costs for an agile data center. VirtualBox will transform your IT infrastructure into a lean data center on a Windows XP/Vista/7, Windows 2003/2008 Server, Linux, Macintosh, or OpenSolaris platform. Although VirtualBox has grown by leaps and bounds, there is not enough documentation to guide you through its features and implementation.

This hands-on guide gives you a thorough introduction to this award-winning virtualization product. It will help you implement the right virtual environment for you. Additionally, this book will help you set up an environment that will work for your system. You will learn to architect and deploy your first virtual machine without being overwhelmed by technical details.

This practical book unveils the robust capabilities and easy-to-use graphical interface of VirtualBox to help you effectively administer and use virtual machines in a home or office environment. You begin by creating your first virtual machine on a Windows/Linux guest operating system and installing Guest Additions. The book then goes on to discuss the various formats that VirtualBox supports and how it interacts with other formats. The comprehensive instructions will help you to work with all the networking modes offered by VirtualBox. Virtual appliances will be explained in detail—how they help to reduce installation time for virtual machines and run them from VirtualBox.

By the end of this book, you will be able to run your own headless VirtualBox server to create, manage, and run virtual machines in that server from a remote PC.

What This Book Covers

Chapter 1, *Getting to Work with VirtualBox*, gives you a practical introduction to VirtualBox, and how you can use this excellent soft ware to run several virtual machines inside a Windows/Linux host.

Chapter 2, *Creating Your First Virtual Machine: Ubuntu Linux*, teaches you about the basic settings needed to create and run a virtual machine using the Ubuntu operating system. You'll also learn to test some basic functions like web browsing and using the OpenOffice suite of applications.

Chapter 3, *Creating Your Second Virtual Machine: Windows 7*, teaches you how to install Windows 7 on a virtual machine, along with the basic settings needed. You'll also learn to test some basic functions like web browsing and using the Microsoft Office 2007 trial edition.

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Chapter 4, *Installing Guest Additions and Advanced Settings*, teaches you how to install the Guest Additions to take real advantage of your virtual machines. You'll also learn how to share folders between your host PC and your guest virtual machines, how to use seamless windows to integrate your host and guest desktops, and how to activate hardware 3D acceleration on your virtual machines.

Chapter 5, *Storing Data in VirtualBox*, teaches you everything about using virtual hard disks, and how you can use different disk formats such as VDI, VMDK, and VHD seamlessly in your virtual machines. You'll also learn the differences between 'cloning' and 'copying' virtual hard disks, between fixed and dynamically expanding hard drive images, and how to choose between the different hard disk controllers used by VirtualBox.

Chapter 6, *Networking with Virtual Machines*, teaches you all about the five networking modes available in VirtualBox and how to choose the most appropriate mode for your virtual machines, depending on your needs. You'll learn how to connect a virtual machine to the Internet and a local LAN via the default NAT mode, and how to choose the best networking mode when using a virtual machine as a web server, among other things.

Chapter 7, *Using Virtual Appliances*, teaches you about using virtual appliances and how they can help make your life easier when using virtual machines and VirtualBox. You'll also learn how to import and export virtual machines using the OVF standard.

Chapter 8, *Managing Your Virtual Machines From a Remote Computer*, teaches you about the alternative front ends available in VirtualBox, and how you can use them to run your virtual machines based on your specific needs. You will also learn how to set up your very own Ubuntu headless server and use it to run a remote virtual machine from a Windows XP desktop PC.

Appendix A, *Using Snapshots*, teaches you how to save the state of your virtual machines through the snapshots feature. You'll also learn to create alternate realities in your virtual machines, where you can follow two or more completely independent time paths.

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1

Getting to Work with VirtualBox

Hi, and welcome to this book about VirtualBox, the best virtualization software I've ever used! Instead of boring you with a chapter full of theory to explain all the "knicks and knacks" about VirtualBox, I'm going to give you a tiny introduction to virtualization and then jump straight ahead into the installation process, ok?

In this chapter you will:

- ◆ Learn about virtualization and how you can take advantage of this technology
- ◆ Learn to install VirtualBox on Windows XP
- ◆ Learn to install VirtualBox on Ubuntu Linux

And now, let the show begin...

Running multiple virtual machines

The first time I heard about VirtualBox was when I was looking for something to help me make tutorials for Windows users trying to learn to use Linux. I needed something to help me run Ubuntu Linux inside my main Windows XP PC to write my tutorials in MS Word, capture all the Linux screenshots, and paste them directly into the MS Word document. I've worked with this excellent and powerful virtualization software since version 2.0, and I definitely give two thumbs up to the guys in the development team because version 3 has come a really long way, as we'll see throughout the exercises in this book, especially in areas related to the 3D Acceleration and USB support features.

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For those of you new to **virtualization**, let me put it this way: With VirtualBox, you can use a Windows, Linux, Mac OS X, or Solaris PC to run one or more 'virtual' PCs inside it. Each **virtual machine** is called a **guest**, and your main PC is called a **host**. The bottom line is that you can run one 'host' operating system and several 'guest' operating systems inside that 'host'!

For example, if you have a Windows PC with 4 GB of RAM and a 320 GB hard disk, you can use VirtualBox to run three virtual machines side by side on the same computer running Windows. The following table shows how you can distribute your physical resources among the three virtual machines and your Windows PC:

Machine	Resources	Description
Windows XP (host)	RAM: 1 GB Hard Disk: 80 GB	This is your physical machine.
Linux Virtual Machine (guest 1)	RAM: 1 GB Hard Disk: 80 GB	This is the first virtual machine. You can use practically any Linux distro available!
Open Solaris Virtual Machine (guest 2)	RAM: 1 GB Hard Disk: 80 GB	This is the free, open source version of the Solaris operating system.
Windows 7 Virtual Machine (guest 3)	RAM: 1 GB	This is a new Windows release.

Naturally, you don't need to use all your VMs at the same time! Most of the time, you'll end up having a lot of virtual machines on your host PC and running only one or two of them in parallel. And don't worry about your computer's resources. Having an 80 GB virtual hard disk doesn't mean that your virtual machine is going to take up all that storage space immediately. Thanks to VirtualBox, you can have dynamically expanding storage, which means the initial size of your virtual machine's hard disk will be very small, and it will increase its size to take up more space as needed.

That means you can have more than four virtual machines with 80 GB hard drives on the Windows XP host computer, in the above example, because their virtual hard drives won't take up their full size immediately. However, it's better to keep in mind your physical hard disk space limitations when creating your virtual machines in order to avoid the typical problems that arise when your hard disk is full!

But that's enough chatter for now! You'll learn more about virtualization and VirtualBox with all the exercises I've prepared throughout the book, so let's get going!

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Installing VirtualBox on Windows

Now let's get our hands dirty with the first exercise in this chapter! If you're going to install VirtualBox on Linux, feel free to skip this section. I'm going to use Windows XP in this exercise because it's currently the most widely used version of Windows. But the procedure is similar in Windows Vista or Windows 7, so you can use whichever one suits your needs the best.

Time for action – downloading and installing VirtualBox on Windows

In this exercise, you'll see how easy it is to download VirtualBox and install it in a Windows XP system.

1. Open your Web browser, and type `http://www.virtualbox.org` in the address bar. The VirtualBox main page will appear:

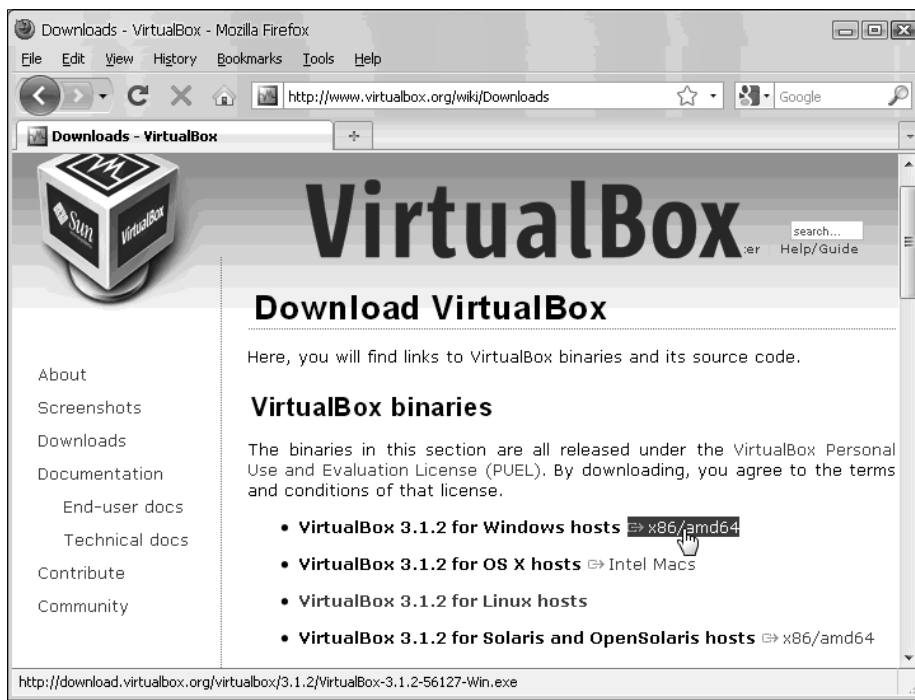


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2. Click on the **Downloads** link located in the left sidebar. The **Download VirtualBox** page will show up:



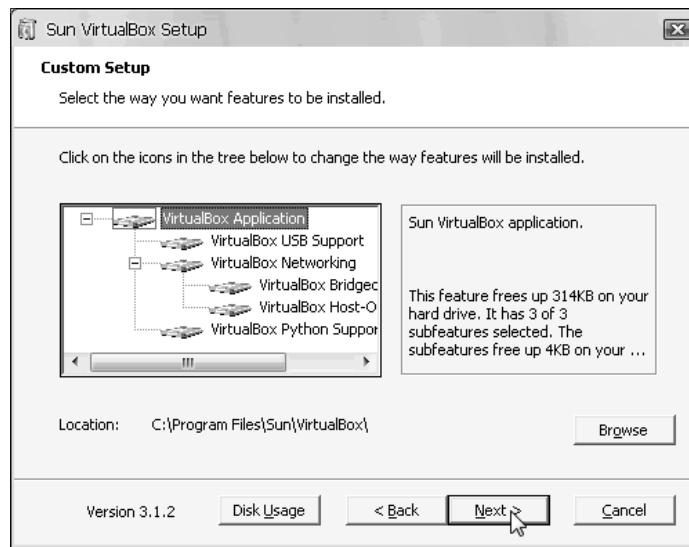
3. Now click on the **x86/amd64** link at the right of the **VirtualBox 3.1.X for Windows hosts** line. A dialog box will pop up, asking if you want to open or save the VirtualBox installation file. Click on **Save** to start downloading this file.
4. Once the downloading process ends, double-click on the downloaded file (it should be something like **VirtualBox-3.X.X-X-Win.exe**), and wait for the **Do you want to open this file?** warning dialog box to appear. Click on **Run**, and the **Sun xVM VirtualBox Setup** dialog will appear:

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5. Click on the **Next** button to start installing VirtualBox on your PC. The next dialog will ask you to read the **VirtualBox Personal Use and Evaluation License (PUEL)**. If you agree with it, select the **I accept the terms in the License Agreement** radio button, and click on **Next** to continue.
6. The next dialog, **Custom Setup**, will show you the VirtualBox features that will be installed as well as the installation directory. Leave the default options, and click on **Next** to continue:



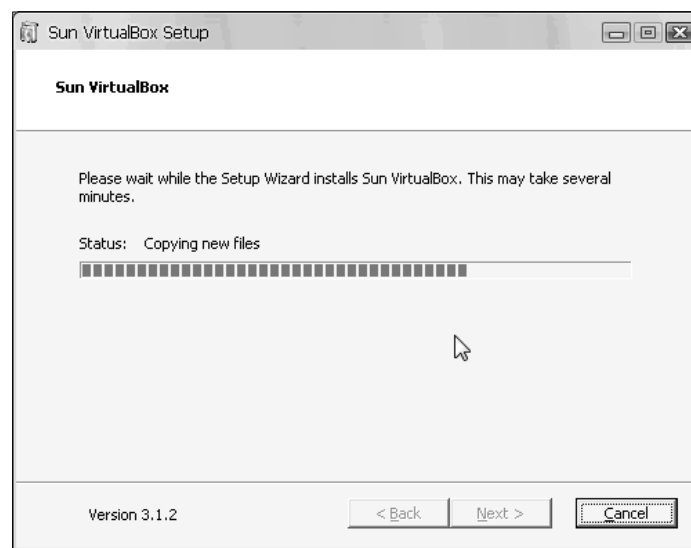
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7. On the next dialog, you need to choose if you want to create a shortcut to run VirtualBox from the desktop and/or from the Quick Task Bar. You can leave both options selected, and click on **Next** to continue.
8. The next dialog will warn you about temporarily disconnecting you from the local area network because the setup program will install the **Sun xVM VirtualBox Networking** feature:

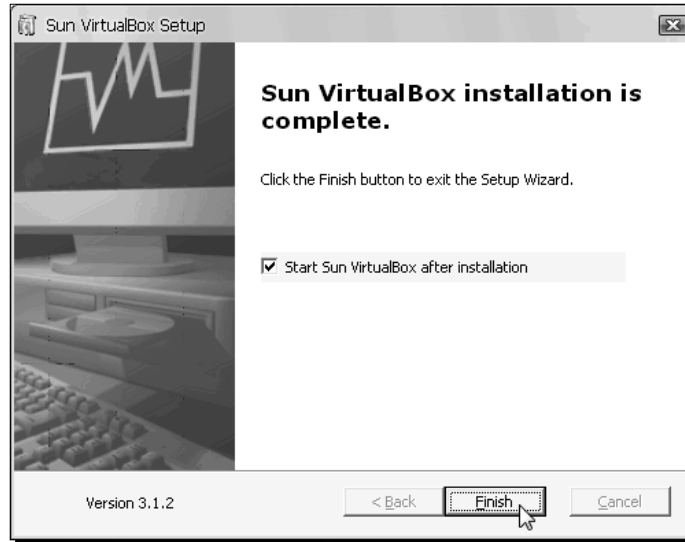


9. Click on **Yes**, and then on **Install** to start installing VirtualBox on your computer:

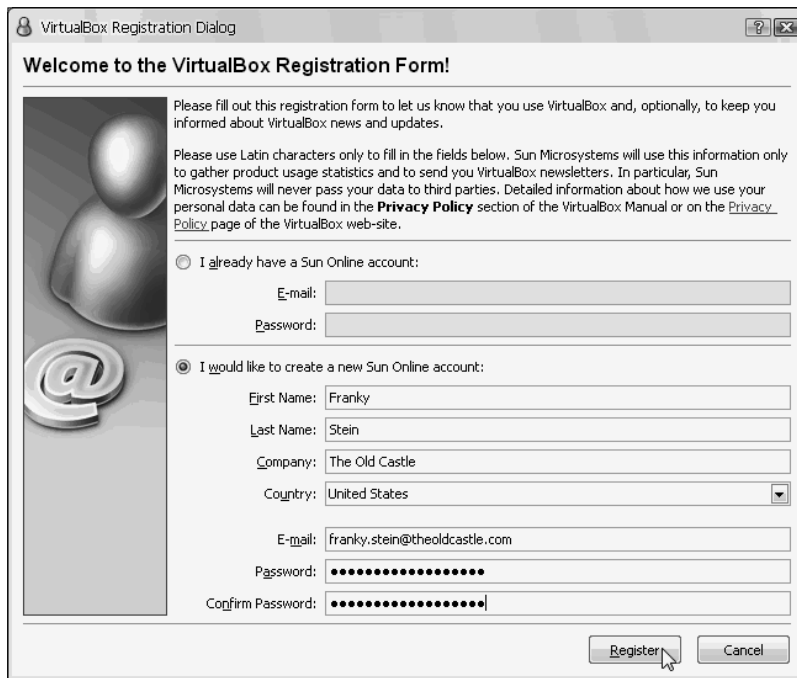


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10. Once the installation process finishes, you'll see the following dialog:



11. Click on **Finish** to exit the setup wizard and open the VirtualBox main window. The **VirtualBox Registration Dialog** will appear next:



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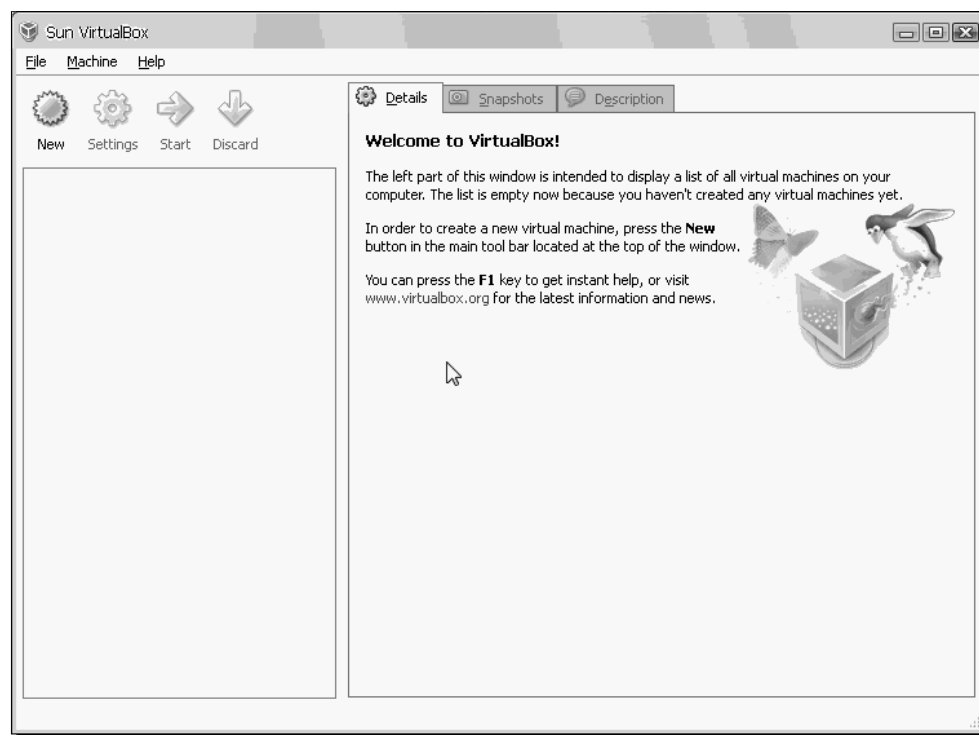
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12. If you already have a Sun account, just fill in your email and password, and click on the **Register** button to register your copy of VirtualBox. If this is the first time you're using a Sun product, select the **I would like to register creating a new Sun Online account** radio button, and fill in the required fields. Then click on **Register**. Once you register with Sun, you'll see the following success dialog:



13. Now click on the **OK** button to go to the VirtualBox main screen:



14. You can close VirtualBox now.

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What just happened?

See how easy it was to download and install VirtualBox on Windows? And wait until you start using it! You'll start wondering why someone didn't come up with VirtualBox ten years ago! Seriously speaking, however, you can use VirtualBox on the following Windows platforms:

- ◆ Windows XP, all service packs (32-bit)
- ◆ Windows Server 2003 (32-bit)
- ◆ Windows Vista (32-bit and 64-bit).
- ◆ Windows Server 2008 (32-bit and 64-bit)
- ◆ Windows 7 (32-bit and 64-bit)

And the installation process is very similar, if not identical, on most Windows versions. Just be sure to have enough RAM for your physical 'host' PC and one or more 'guest' virtual machines. Oh, and you have to be careful with hard disk space also! But you don't need to worry about that right now; we'll cover all those things throughout the exercises in this book.

Have a go hero – experiment with VirtualBox on Windows

If you have the ability to do so, it would be a great idea to try VirtualBox on other Windows versions, especially on Windows 7, the most recent Windows release. You can also start browsing around VirtualBox's user interface and see if you can create a virtual machine by yourself!

Installing VirtualBox on Linux

If you read the previous section about installing VirtualBox on Windows, then this will be your second hands-on exercise, but if you skipped the Windows section, let's go and get our hands dirty with VirtualBox and Ubuntu Linux!

Time for action – downloading and installing VirtualBox on Linux

Ok, for this exercise you'll need a copy of Ubuntu Linux already installed on your PC. I chose Ubuntu because it's one of the friendliest Linux distributions available, as you will see in a moment.

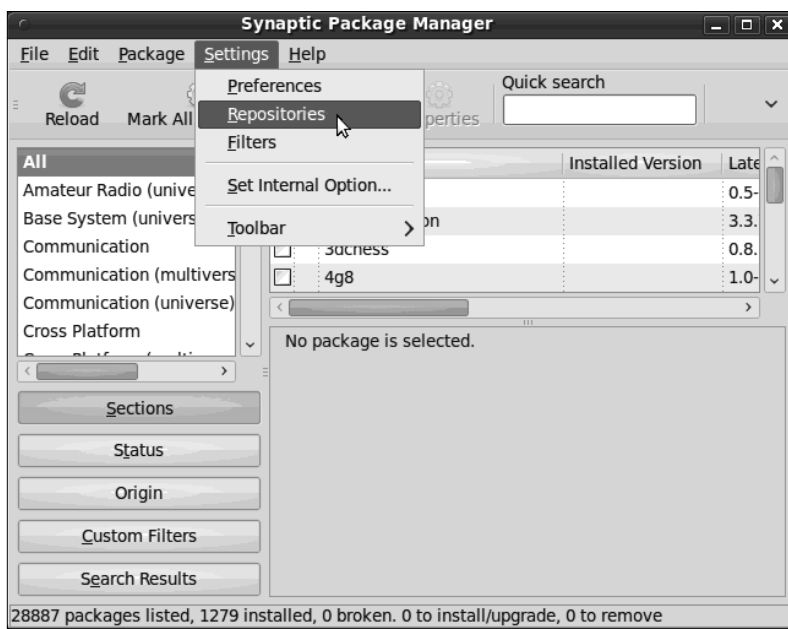
1. Before installing VirtualBox, you'll need to install two additional packages on your Ubuntu system. Open a terminal window (**Applications | Accessories | Terminal**), and type `sudo apt-get update`, followed by *Enter*. If Ubuntu asks for your administrative password, type it, and hit *Enter* to continue.
2. Once the package list is updated, type `sudo apt-get install dkms`, and hit *Enter*; then type *Y* and hit *Enter* to install the DKMS package.

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- The other package needed before you can install VirtualBox is `build-essential`. This package contains all the compiling tools VirtualBox needs to build the kernel module. Type `sudo apt-get install build-essential`, and hit *Enter*. Then type `Y`, and hit *Enter* again to continue. Wait for the `$` prompt to show up again, type `exit`, and hit *Enter* to close the terminal window. Now you can proceed to install VirtualBox.
- Open the Synaptic Package Manager (**System | Administration | Synaptic Package Manager**), and select the **Settings | Repositories** option in the menu bar (if Ubuntu asks for your administrative password, type it, and press *Enter* to continue):

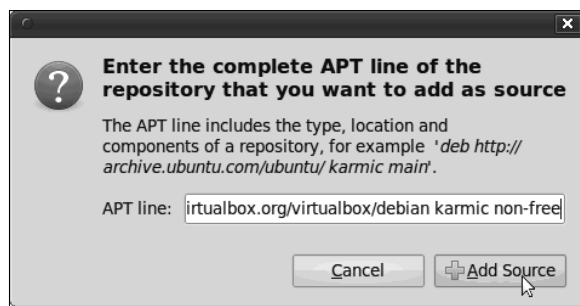


- The **Software Sources** dialog will appear. Click on the **Other** (on earlier Ubuntu versions the name of this tab is **Third-Party Software**) and then on the **Add+** button:

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6. Another dialog box will show up. Now type `deb http://download.virtualbox.org/virtualbox/debian karmic non-free` on the **APT line** field, and click on the **Add Source** button:

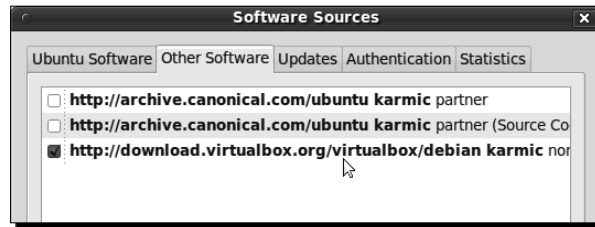


If you're not using Ubuntu 9.10 Karmic Koala, then you'll need to change the APT line in the previous step. For example, if you're using Ubuntu 9.04 Jaunty Jackalope, replace the `karmic` part with `jaunty`. On the http://www.virtualbox.org/wiki/Linux_Downloads webpage, you'll find more information about installing VirtualBox on several Linux distributions and the APT line required for each Ubuntu distribution available.

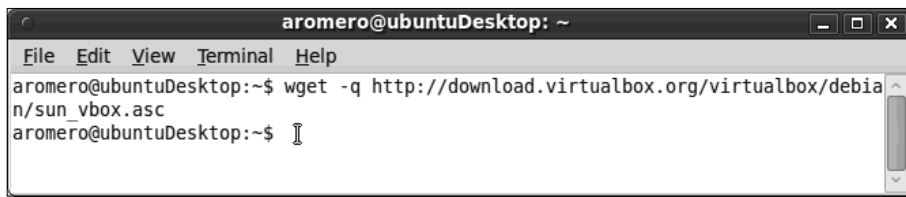
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- The third-party software source for VirtualBox will now show up on the list:



- Now open a terminal window (**Applications | Accessories | Terminal**), and type `wget -q http://download.virtualbox.org/virtualbox/debian/sun_vbox.asc` to download the Sun public key:

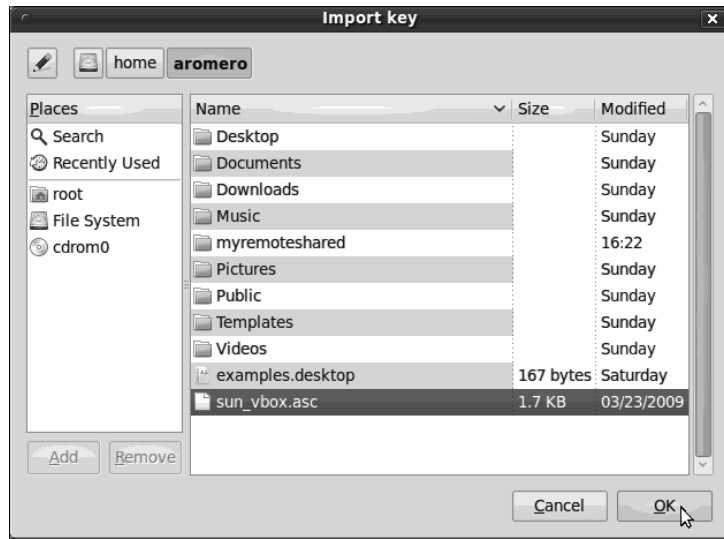


- Go back to the Synaptic Manager, select the **Authentication** tab, and click on the **Import Key File** button:



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10. The **Import Key** dialog will appear next. Select the `sun_vbox.asc` file you just downloaded, and click on the **OK** button to continue:



11. The Sun public key for VirtualBox should now appear on the list:

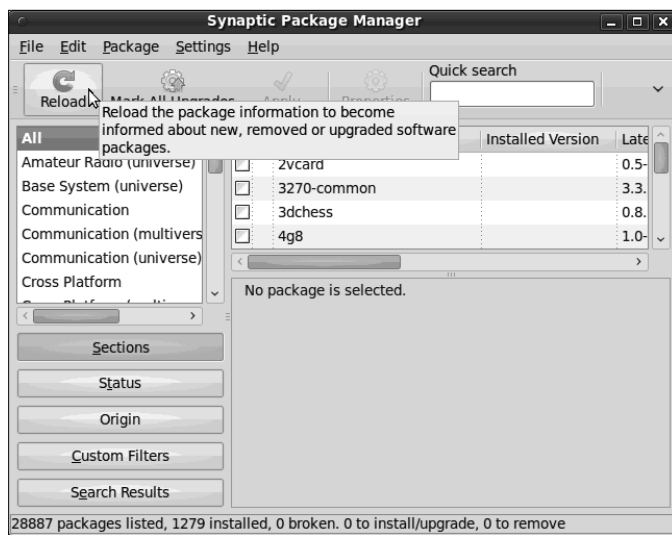


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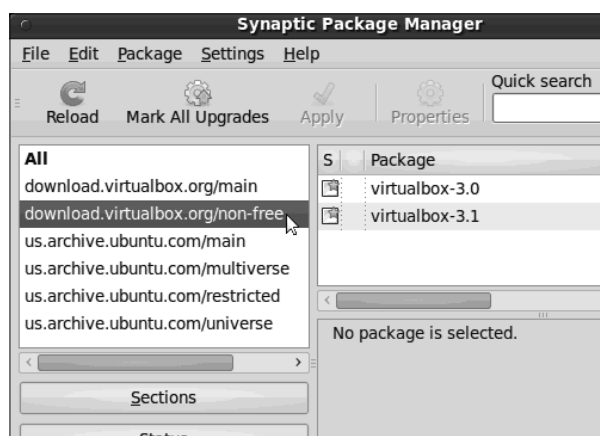
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12. You can now delete the Sun public key file you downloaded earlier. Click on the **Close** button to return to the Synaptic Package Manager. If the **Repositories Changed** dialog shows up, select the **Never show this message again** checkbox, and click on **Close** to continue.
13. Now click on the Synaptic Package Manager's Reload button to update your package sources with the most recent VirtualBox version:

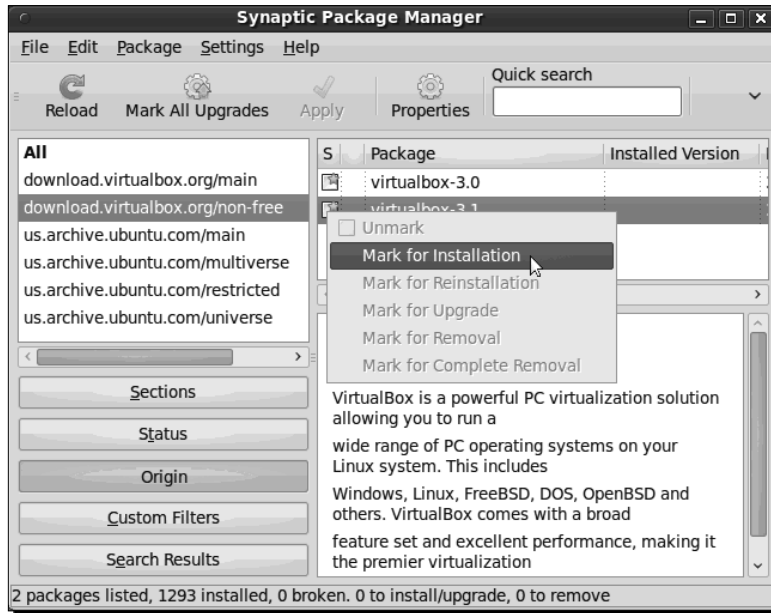



14. Once the Synaptic Package Manager finishes updating the package sources list, click on the **Origin** button located at the lower-left part of the window and select the `download.virtualbox.org/non-free` repository from the window above this button:



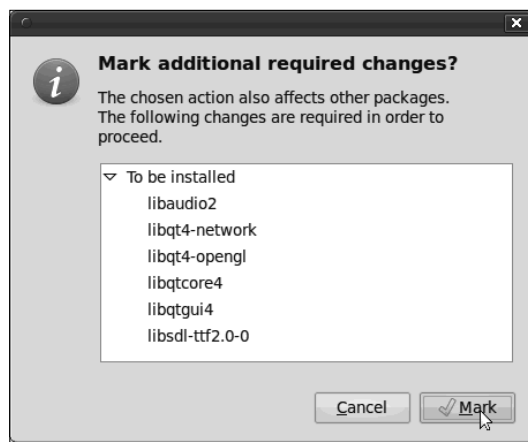
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- 15.** Click on the most recent `virtualbox-3.X` package checkbox in the right window, and select the **Mark for Installation** option:



 When upgrading to a newer VirtualBox version, you must first completely remove the older version. Then you'll be able to install the newest version without any hassles.

- 16.** The **Mark additional required changes?** dialog box will appear next. Click on the **Mark** button to mark all the additional packages required to install VirtualBox:

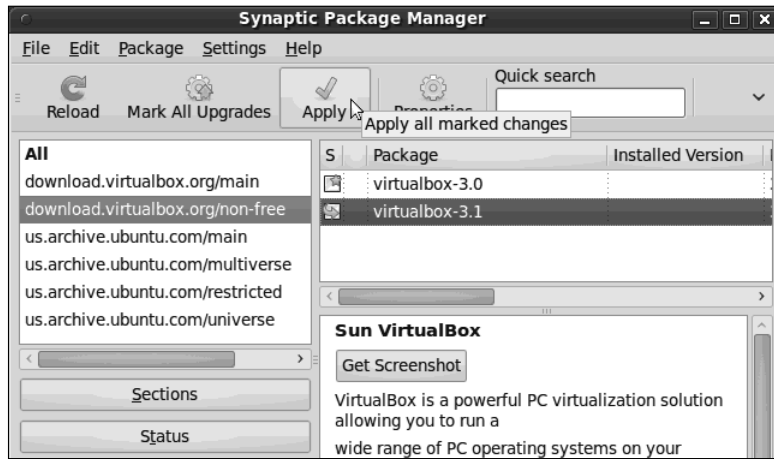


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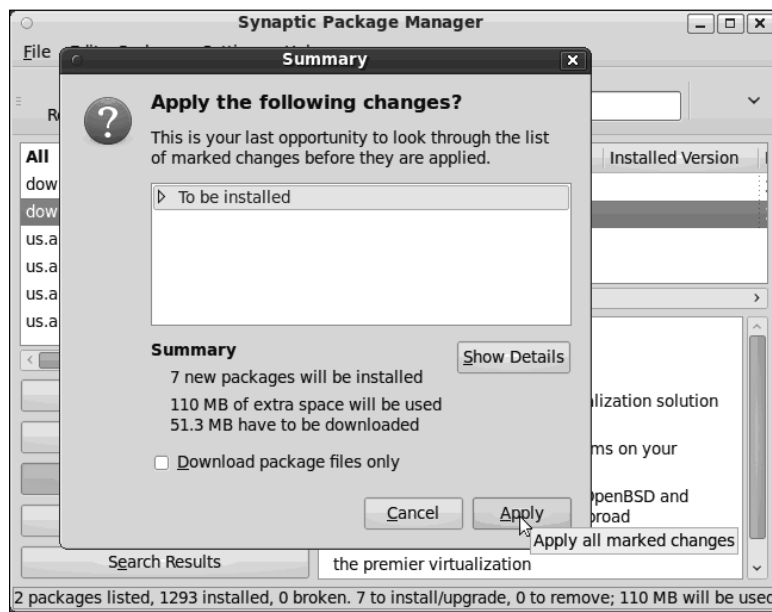
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17. Now click on the **Apply** button in the Synaptic Package Manager:



18. The **Apply the following changes?** dialog box will appear next. Make sure the **Download package files only** option is deselected, and click on the **Apply** button to start installing the required packages, along with VirtualBox:



19. The Synaptic Package Manager will start downloading the required packages and, when finished, it will install them along with VirtualBox.

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20. Eventually, the **Configuring virtualbox-3.X** dialog will appear:



21. Click on **Forward** to continue configuring VirtualBox. The configuration wizard will ask if you want to compile the `vboxdrv` kernel module. Make sure that option is selected, and click on **Forward** to continue:

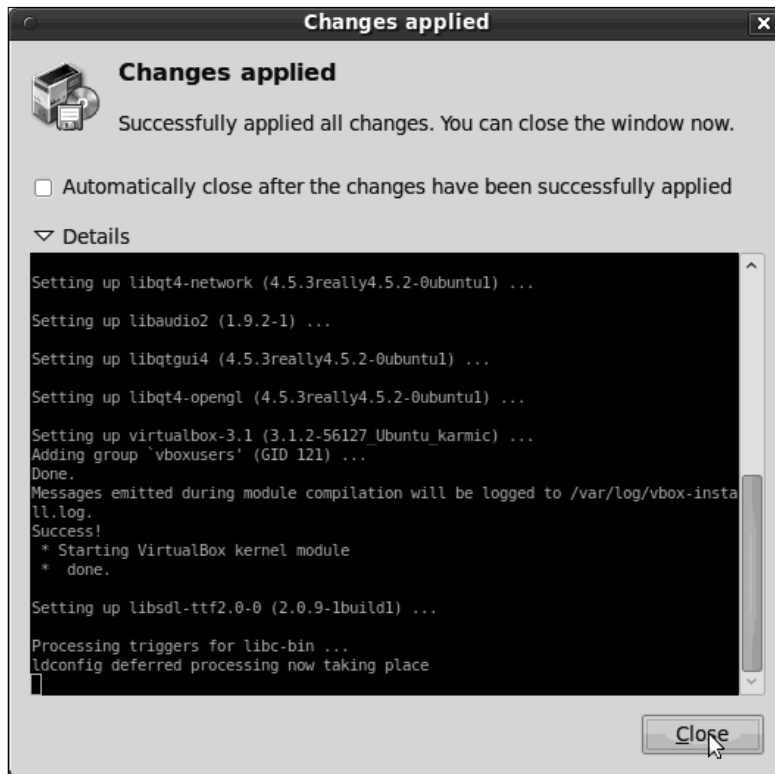


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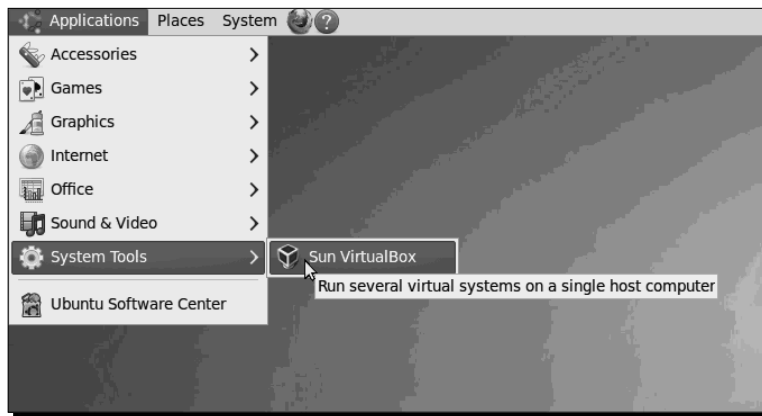
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22. Wait until **Debconf** compiles the kernel module and finishes all the configuration procedure for VirtualBox. After that, the following dialog will appear:



23. This means VirtualBox installed successfully. Click on the **Close** button to continue and close the Synaptic Package Manager.
24. Open a terminal window, type `sudo usermod -a -G vboxusers yourusername`, and hit *Enter* to add your username to the `vboxusers` group. Don't forget to replace *yourusername* with your own username. Then type `exit`, and hit *Enter* again to close the terminal window.
25. Logout from Ubuntu, and then log back in. Now you can access VirtualBox through the Ubuntu menu bar (**Applications | System Tools | Sun VirtualBox**):

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26. After opening VirtualBox for the first time, you'll see the **VirtualBox License** dialog. Scroll down to the end of the agreement, and then click on the **I Agree** button to continue.
27. Next you'll see the **VirtualBox Registration Dialog**:



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- 28.** If you already have a Sun account, just fill in your email and password, and click on the **Register** button to register your copy of VirtualBox. If this is the first time you're using a Sun product, select the **I would like to register creating a new Sun Online account** radio button, and fill in the required fields. Then click on **Register**. Once you register with Sun, you'll see a success dialog:



- 29.** Now click on the **OK** button to go to the VirtualBox main screen:



- 30.** You can close VirtualBox now.

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What just happened?

Ok, ok... Installing VirtualBox on Linux is a little more elaborated process, but hey, I was behind you all the time, right? On Linux there are some additional things to consider when you're installing a software application like VirtualBox. I decided to show you how to use the Synaptic Package Manager because this wonderful piece of open source software takes care of all the complicated things that always come up when installing something in Linux.

On the first three steps of the previous exercise, you upgraded the Ubuntu packages list and then installed a couple of packages required by VirtualBox on a Linux installation. These packages prepare your system for building the external modules VirtualBox needs to operate virtual machines. The `DKMS` (Dynamic Kernel Module Support) package allows your system to build these modules dynamically, so you don't have to worry in case you upgrade your Ubuntu system. The `build-essential` package contains the `gcc` compiler and some other tools required to compile and build the kernel modules. The Synaptic Package Manager uses repositories scattered throughout Internet. To install VirtualBox, we had to add a specific repository called `download.virtualbox.org/main` because the standard Ubuntu installation only includes the `virtualbox-ose` package, the **OSE (Open Source)** version of VirtualBox. In this book we're going to work with the **PUEL (Personal Use and Evaluation License)** version of VirtualBox because it's free for personal/academic use or for product evaluation.

Basically, the PUEL version of VirtualBox has some features that aren't included in the OSE version:

- ◆ **USB support:** You can insert USB devices on your host PC and use them in your virtual machines.
- ◆ **RDP (Remote Display Protocol) server:** The PUEL version of VirtualBox includes a complete RDP server, so you can connect to remote virtual machines from any RDP compatible client.
- ◆ **USB over RDP:** This means a virtual machine can access the USB devices connected to the remote computer on which the RDP client is running.

Finally, we also have to add the Sun public key because Synaptic won't be able to access the VirtualBox PUEL repository otherwise. After that, you just need to select the desired VirtualBox version, and Synaptic will take care of the rest for you.

Once you've installed VirtualBox on Linux, the process for creating and using virtual machines will be the same on any platform.

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Have a go hero – experimenting with VirtualBox on Linux

If you have the ability and resources, would be a great idea to try VirtualBox on other Linux distros, but you need to make an extra effort because not every distribution uses the Synaptic Package Manager. But the VirtualBox website has some basic information on how to install VirtualBox on several Linux distros such as Debian, Fedora, Red Hat, or SuSE. The website provides several specific packages for some of the most popular Linux distributions and one general package for the rest of the Linux distros available. And remember you can always send me an email in case you get stuck!

Oh, and you can also start to browse around VirtualBox's user interface. Go on and experiment all you can and try to create a virtual machine by yourself!

Testing VirtualBox

Ok, you have VirtualBox installed and ready to go. Are we going to wait until Chapter 2 to start using this wonderful piece of software? Naah! Let's take it for a little test drive...

Time for action – creating and testing a Damn Small Linux virtual machine

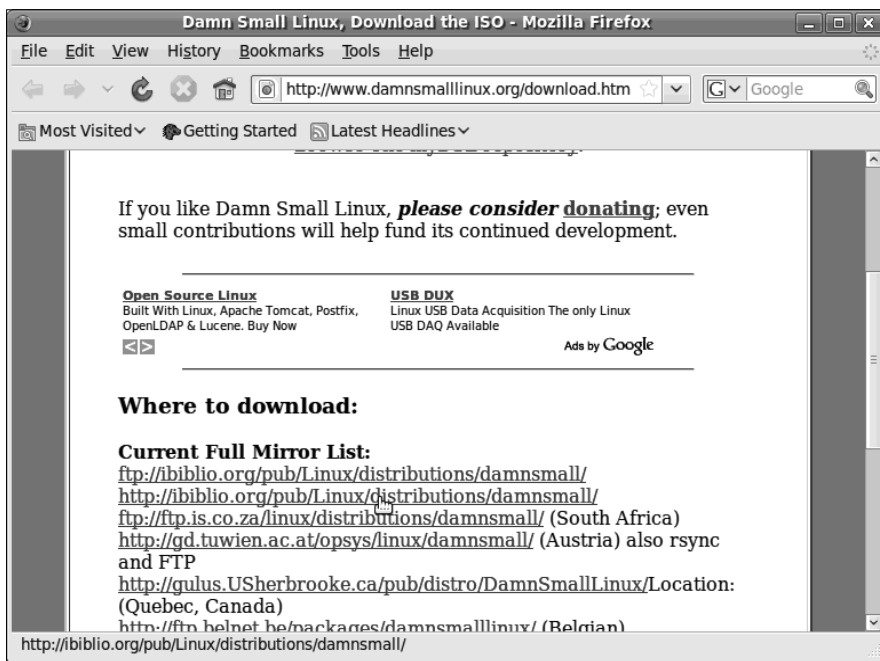
In this next exercise, you'll download **Damn Small Linux**, one of the smallest Linux distros currently available, and then I'll show you how to create a quick virtual machine on your brand new VirtualBox software in order to test it!

1. Open your web browser, and type `http://www.damnsmalllinux.org`. The **What is DSL?** page will show up:

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2. Scroll down the page until you locate the **Download** link, or go to the `http://www.damnsmalllinux.org/download.html` page directly, and scroll down to the **Current Full Mirror List** section:



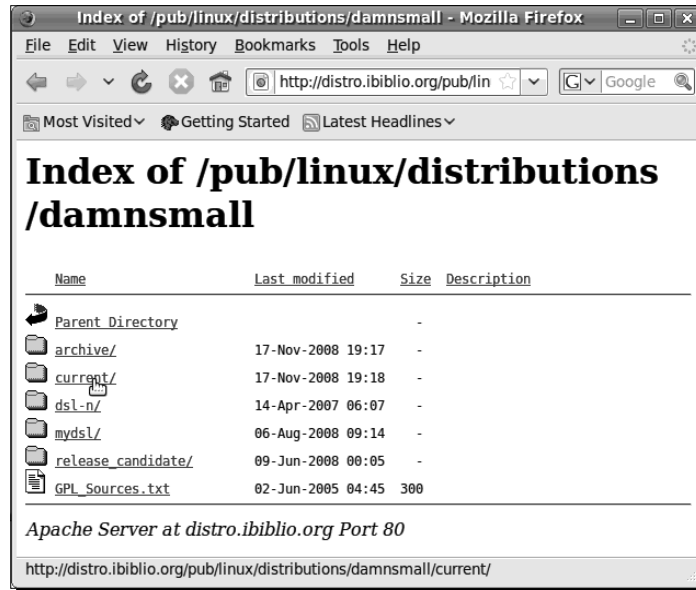
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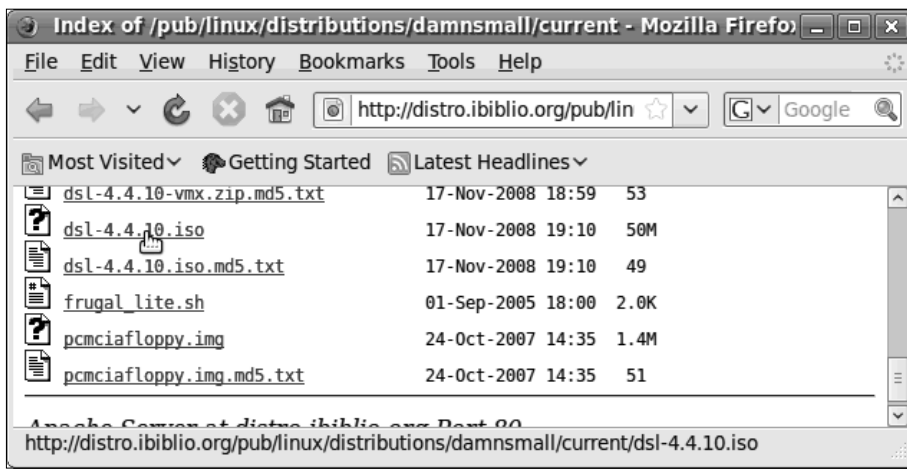
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3. Click on an HTTP link (in this case, I chose the second link, <http://ibiblio.org/pub/Linux/distributions/damnsml/>) and then on the **current** link of the next page:

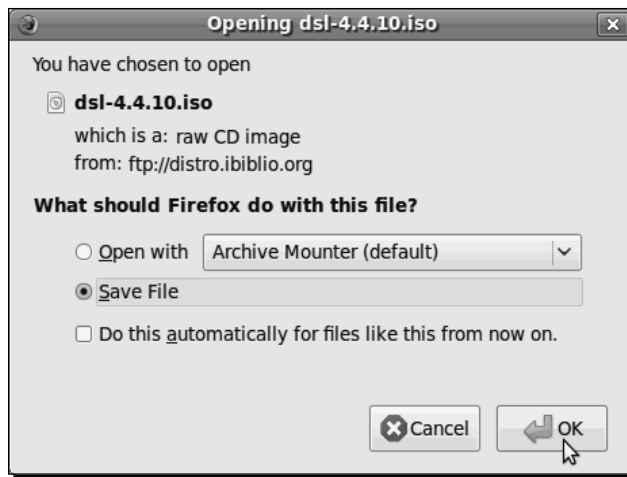


4. On the next page, scroll down until you locate the **dsl-4.4.10.iso**, and click on it to start downloading the DSL ISO file:



5. A dialog box will pop up, asking if you want to open or save the DSL ISO file. Click on **Save** to start downloading this file:

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6. Once the downloading process ends, open VirtualBox, and click on the **New** button to create a new virtual machine:



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7. The **Welcome to the New Virtual Machine Wizard** dialog will show up. Click on **Next** to continue:

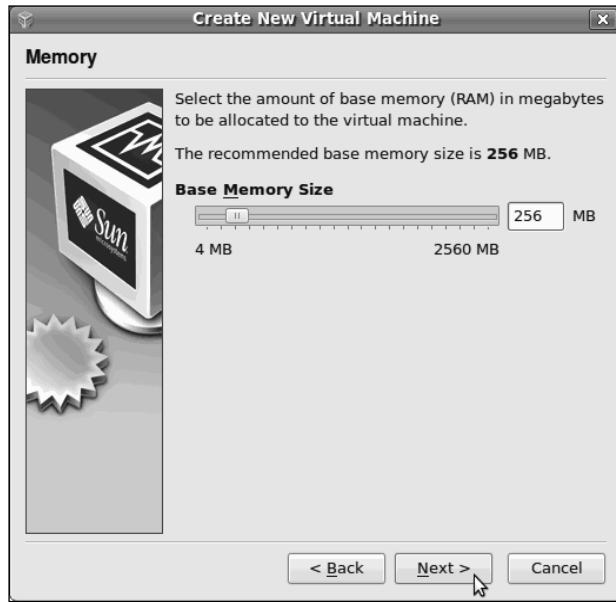


8. The **VM Name and OS Type** dialog will appear next. Type **DSLTest** in the **Name** field, select **Linux** as the **Operating System** and **Debian** as the **Version**, then click on **Next** to continue:



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9. Leave the default 256 MB value as the **Base Memory Size** in the **Memory** dialog, and click on **Next** to continue:



10. Leave the default **Create new hard disk** option on the **Virtual Hard Disk** dialog. Make sure the **Boot Hard Disk (Primary Master)** option is selected, and click on **Next** to continue:



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11. Now the **Welcome to the Create New Virtual Disk Wizard!** dialog box will appear. Click on **Next** to continue, and leave the **Dynamically expanding storage** option selected as the **Storage Type** in the **Hard Disk Storage Type** dialog:



12. In the next dialog (**Virtual Disk Location and Size**), leave the `DSLTest` and 8.00 GB default options for **Location** and **Size**, respectively, and click on **Next** to continue:



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- 13.** Now the wizard will show you a **Summary** of all the parameters for the virtual disk of your virtual machine. Click on **Finish** to continue:



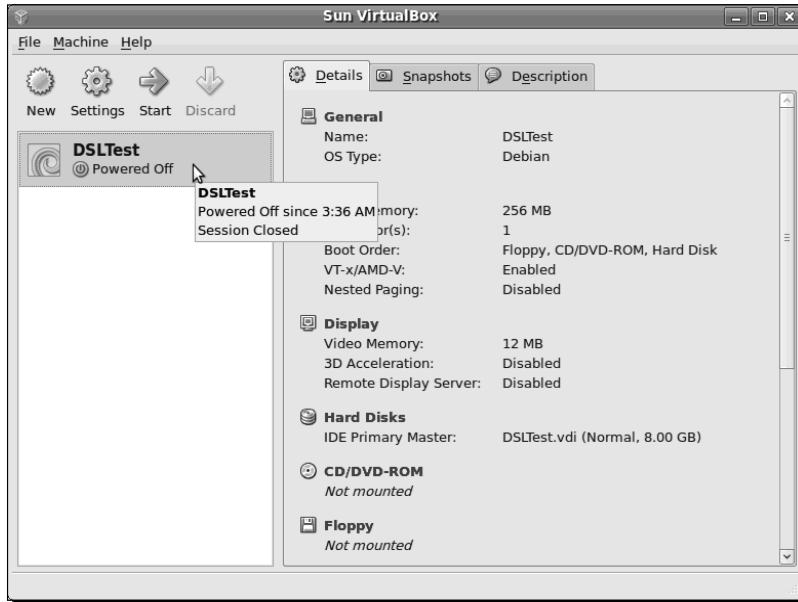
- 14.** The last dialog will show you a **Summary** of all the parameters selected for your new virtual machine. Click on **Finish** to continue:



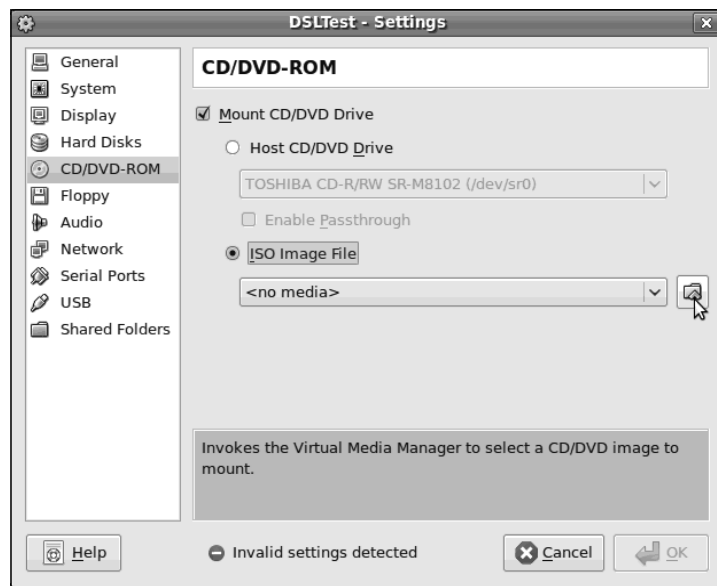
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15. After creating the virtual machine, it will show up in VirtualBox's main screen:

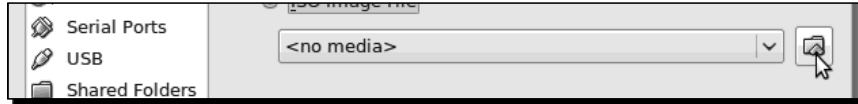


16. Now click on the **Settings** button to open the **DSLTest - Settings** dialog box. Select the **CD/DVD-ROM** category from the list on the left side, click on the **Mount CD/DVD Drive** checkbox, and then select the **ISO Image File** option:

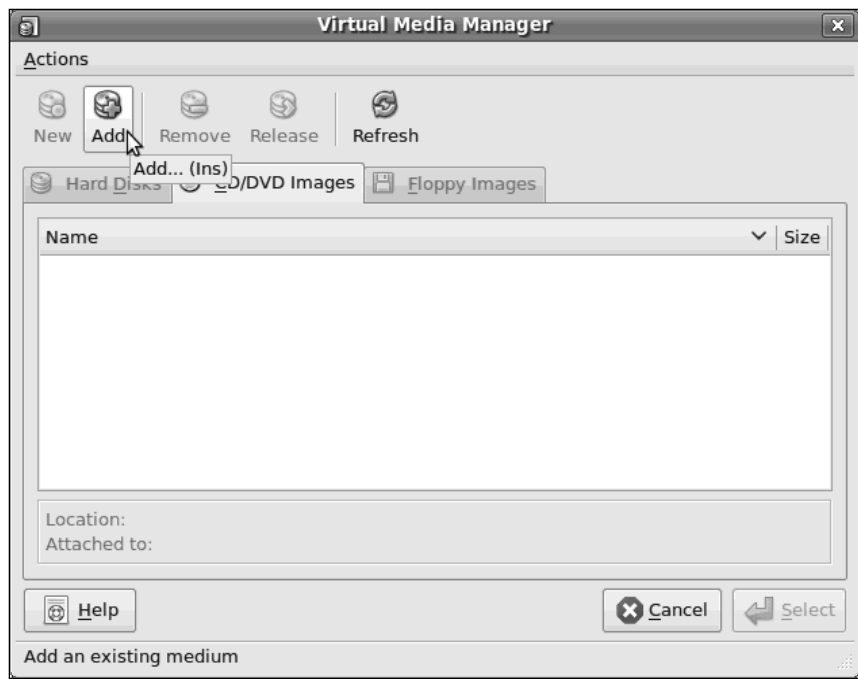


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17. Next, click on the **Invoke Virtual Media Manager** button:



18. The **Virtual Media Manager** dialog will appear. Click on the **Add** button to continue:

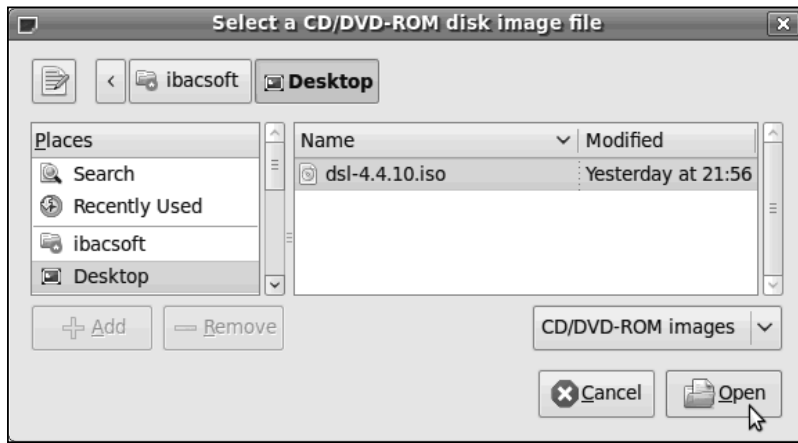


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19. The **Select a CD/DVD-ROM disk image file** dialog box will show up next. Navigate to the directory where you downloaded the `dsl*.iso` image, and click on the **Open** button to continue:



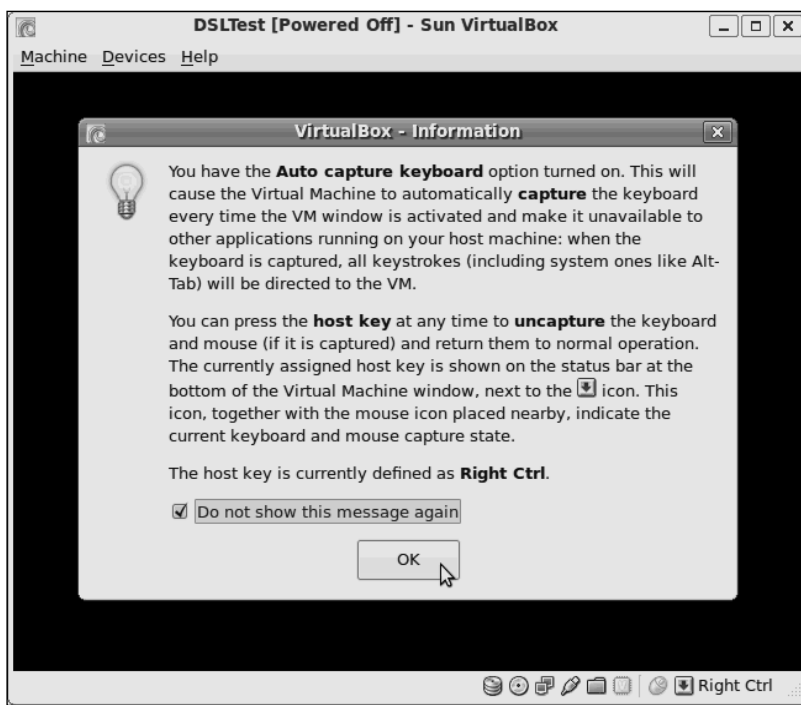
20. Now the DSL ISO image will appear in the **CD/DVD Images** list of the Virtual Media Manager:



21. Click on **Select** to return to the **DSLTest – Settings** dialog box, and then click on **OK** to return to VirtualBox's main screen.

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22. Click on the **Start** button to start your virtual machine. The **VirtualBox – Information** dialog box will show up to inform you that you need to use the *Right-Ctrl* key to alternate between using the keyboard in your virtual machine and your host PC. Select the **Do not show this message again** checkbox, and click on **OK** to continue:

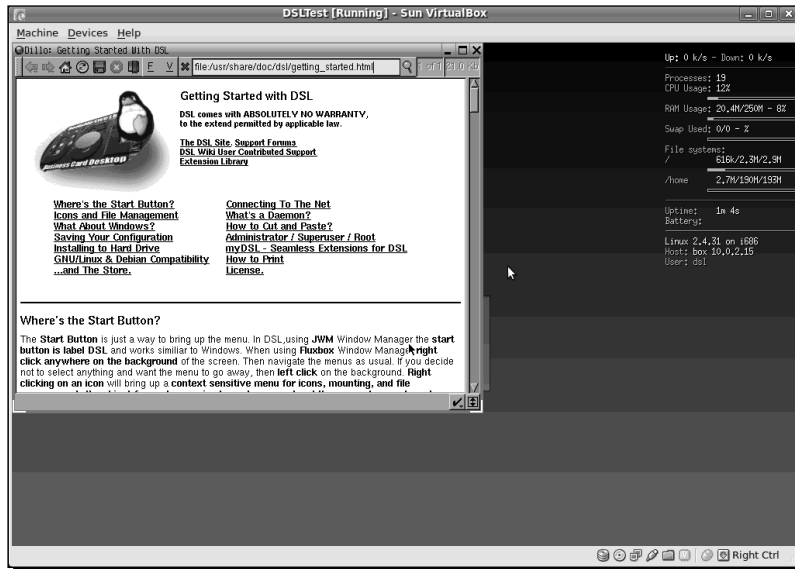


23. The DSL virtual machine will start to boot. Wait until a **VirtualBox – Information** dialog box appears to tell you that the virtual machine is using **16 bit** color instead of **32 bit**. Select the **Do not show this message again** checkbox, and click on **OK** to continue.
24. Click inside the virtual machine's screen with your mouse, and another **VirtualBox – Information** dialog will show up to inform you that you need to use the *Right-Ctrl* key to alternate between using the mouse in your virtual machine and your host PC. Select the **Do not show this message again** checkbox, and click on **Capture** to continue.

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25. Wait for a few minutes for DSL to start booting up. When it is finished, the following screen will show up:



26. Now you have created your first virtual machine!

What just happened?

Whew! I must admit that this was a lengthy exercise! Thanks to VirtualBox's user-friendly interface, you've just learned how to create this test virtual machine with one of Linux's smallest distros available: **Damn Small Linux (DSL)** for short. In fact, it's so small, it doesn't even need a hard disk to work properly! I hope you had fun with this exercise, and don't worry about all the settings involved in creating a virtual machine; we'll have enough exercises to deal with them throughout the rest of the book!

For now, just concentrate on the virtual machine creation process as a whole: Click on the **New** button, select the operating system you want to use, assign a chunk of memory and hard disk space to your new virtual machine, and tell it where to boot an ISO image with the operating system of your choice, as if it were just another ordinary PC in your desk!

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Have a go hero – creating more virtual machines

Now that you've created a test virtual machine, go on and download other Linux distributions, and try to create other virtual machines; experiment with different settings for RAM and hard disk space.



Just remember to never assign more than half of your physical RAM to a virtual machine because your main PC could collapse!

We'll talk more about this later. For now, just keep experimenting with all the VirtualBox features you can! And if you have any questions, feel free to email the Packt team at questions@packtpub.com!

Pop quiz – doing the thing

1. What would be the best definition of a virtual machine?
 - a. A physical PC connected to a LAN.
 - b. A 'guest' machine running inside another 'host' machine.
 - c. A computer with lots of RAM and hard disk space.
2. You need to use MS Word to write a document, but the only available PC at the moment is running Linux. The best thing you can do is:
 - a. Cry and pull your hair out in despair.
 - b. Install VirtualBox on your Linux PC, create a Windows XP virtual machine, and install MS Word.
 - c. Go out and buy a new Windows Vista PC with MS Word installed.
3. Virtualization means...
 - a. Sharing one physical PC between two or more virtual machines to maximize resource usage.
 - b. To surf the web looking for new applications.
 - c. Running two or more operating systems in one PC.

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Getting to Work with VirtualBox

Summary

This chapter was a hands-on introduction to VirtualBox, the best virtualization software out there!

Specifically, we covered:

- ◆ What virtualization is, and how we can use VirtualBox to run several virtual machines inside a physical host
- ◆ How to install VirtualBox on Windows environments
- ◆ How to install VirtualBox on Linux environments
- ◆ How to create, configure, and run a test virtual machine

Now that you have VirtualBox installed and running, you're ready to delve into the VirtualBox world! In the following chapter, I'll show you how to create, configure, and run your own Ubuntu Linux virtual machine in any host operating system supported by VirtualBox!

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