# Installing and configuring Ubuntu Linux 9.04

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#### Introduction

Many people want to try out a Linux operating system but they don't know where to begin. Furthermore, once it is installed, they don't know how to get things running. This document will go over 3 different ways to install Ubuntu and get it working correctly. It covers getting the proper (mostly) codecs for streaming audio and video that many websites use today. It shows how to install the Adobe Flash player plug-in for Firefox. For those wanting (or needing) to develop programs either for Linux or for Embedded Systems (such as JK Micro's OmniFlash or OmniEP -see <u>http://www.jkmicro.com</u>), there are steps on how to install additional software.

This document is in no way a fully comprehensive installation guide. It does not cover what to do if you have errors or how to use Linux. It is simply a guide by which I use to set up my PC's with a usable Linux. For more information, try searching the web for Ubuntu and you will find many resources to help you get started.

#### **Getting Started**

In order to begin, we need to decide how we want to install our Linux environment. We have a couple choices depending up on your taste.

There are a couple questions to ask yourself

- 1.) Will your IT department allow you to install a different operating system side by side with your current one for dual booting. Some companies don't allow this?
- 2.) Do you feel comfortable dual booting your computer?

If your company allows you to install another operating system and dual boot your system, then this is my preferred method. Not everyone likes this approach so we will cover a couple different options.

#### **Downloading Ubuntu**

We need to download the latest copy of Ubuntu Desktop edition. Head over to <u>http://www.ubuntu.com</u>



Click the Download now button for the Desktop Version.



Choose a location closest to you and choose the 32-bit version as it seems to work better. Click the Begin Download button to get your ISO image. (Note: it's about 650 Meg so it takes some time).

Once your ISO has completed downloading, burn it to a CD using your choice of software. My personal favorite is ImgBurn from <u>http://www.imgburn.com/</u>. Its free and does a pretty good job.



#### **Installing Ubuntu**

There are a few different ways we can install Ubuntu. They are presented below.

#### **Dual Boot - Install inside Windows - The easiest solution**

We can choose to install Ubuntu from within Windows. This will still give us the ability to dual boot into Ubuntu at startup, but allows us to un-install it from the Windows control panel when we are done. This way leaves our Windows partitions in tact but allows us to run Ubuntu full fledged on the hardware. This allows us to take advantage of the graphics drivers if they are available for fast graphics (NVIDIA graphics cards work the best).



To install inside of Windows, simple insert the new CD you just created.

Click the Install inside Windows button.

🧔 Ubuntu	Installer
<b>C</b>	You are about to install Ubuntu-9.04 Please select username and password for the new account
	Installation drive: C: (319GB free)    Language: English
	Installation size: Username: XXXXXXXX Password:
	Desktop environment:
Rev 128	Accessibility Install Cancel

Change the installation size from 17G to 25G. I came close to running out of space with 17G. Choose a username and password for your installation.

Now boot into Linux and follow the setup listed under the Virtual Machine - leaving out the Virtual Machine specific instructions.

# Dual Boot - Install to a new partition or drive - The most flexible for advanced users.

This option allows us to install Ubuntu to a new partition or drive that we create. This will change your windows Partition. This option gives us a complete independent install of Ubuntu onto another drive or partition. This requires an unused partition on the hard disk or a separate hard disk. The Ubuntu installer can resize the Windows partition for us to make room if we have enough disk space to do so. This also allows us to take advantage of the graphics drivers if they are available for fast graphics (NVIDIA graphics cards work the best).

This is more advanced for those who aren't afraid to get their hands dirty. This is the way I have my personal computer set up. (I run a virtual machine of Windows inside my Linux setup for when I have to use Windows.)

Ubuntu comes with its own installer that can create the Dual Boot for us. Simply boot the machine with the CD in the drive and choose Install Ubuntu when the screen appears. Ubuntu comes with its own

boot manager - GRUB. What I don't like about it is that it makes uninstallation of Ubuntu difficult because it changes the Windows boot loader to a Linux Boot loader. It's not easy to fix the MBR of a Windows installation.

There is a great tool for managing your dual boot options. Check out EasyBCD and the installation docs there for Ubuntu. I recommend NOT using Ubuntu's Dual boot installation. Follow what EasyBCD has to say about it.

Main Website: http://neosmart.net/dl.php?id=1

Installation docs:

http://neosmart.net/wiki/display/EBCD/Linux

The rest of the installation is beyond the scope of this document. The docs on neosmart's website are pretty good. The only change I have to add to it is when you get to the option to choose which partition to install to, you are presented with 3 choices - the Full disk, any leftover space, or manual. You can choose the leftover space and actually drag the slider back and forth to pick how much space to allocate to Linux. I recommend 50 to 100 GB just give ample room to play.

#### Install inside a Virtual Machine - Works Anywhere

This option is for users whose IT department doesn't allow a different operating system to be installed on the machine in a dual boot fashion. This also gives us the flexibility to run our Linux environment inside our Windows environment without worry of messing up our Windows partitions or installation. Graphics aren't the best in this mode as we don't have a physical graphics card to do all the muscle for us. For software development, this isn't a big issue.

This is the option I will cover because it will work with most computers whether they are at home or in the office. The installation of Ubuntu is basically the same for all the options listed.

There are some quirky things with the way Ubuntu's graphics runs in a virtual machine. It is totally usable but remember that you are running in an emulation layer and the graphics may be a little slower depending on your computer's speed.

First we need to get a copy of a Virtual Machine program. Head on over to Sun's Virtual Box website. <u>http://www.virtualbox.org/</u> Click the Downloads ontion at the left. Choose the software that matches your machine

🔗 Downloads - VirtualBox - Windows Internet Explorer		
GO          Image: Market and Mar		
🖕 Favorites 🛛 👍 🏈 Suggested Sites 🔻 🔊 Get More Add-ons 👻		
Downloads - VirtualBox		
S	VirtualDov	
Minute And	VIILUDIDUX	
	Download VirtualBox	
About	Here, you will find links to VirtualBox binaries and its source code.	
Screenshots	VirtualBox binaries	
Downloads	The binaries in this section are all released under the VirtualBox Personal Use and Evaluation Li	
Documentation	and conditions of that license.	
End-user docs	<ul> <li>VirtualBox 3.0.4 for Windows hosts</li></ul>	
Technical docs	VirtualBox 3.0.4 for OS X hosts      Intel Macs	
Contribute	VirtualBox 3.0.4 for Linux hosts	
Community	<ul> <li>VirtualBox 3.0.4 for Solaris and OpenSolaris hosts           → x86/amd64     </li> </ul>	
	• VirtualBox 3.0.4 Software Developer Kit (SDK)   All platforms (registration required)	
	VirtualBox older builds	

Download and install VirtualBox. Note: During installation, you will temporarily lose your network connection.

Note: Once we have our operating system up and running, we can download Virtual Box for Linux hosts and install windows inside a virtual machine. This is the way I personally work.

Now start Virtual Box to configure a Virtual machine for Ubuntu Linux.

Virtual Box asks you to register. If you don't register, it will nag you each time you start the program. It still runs fine if you don't want to register though. I finally bit the bullet and registered it so it would stop nagging me.



Click the New button to create a new Virtual Machine.

🛐 Create New Virtual	Machine ? X
VM Name and C	)\$ Туре
	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 Ubuntu OS Type Operating System: Linux Version: Ubuntu
	< Back Next > Cancel

Give the machine a name and choose the operation system type.

🧕 Create New Virtua	I Machine	? <mark>×</mark>
Memory	Select the amount of base memory (RAM) in meg allocated to the virtual machine. The recommended base memory size is <b>384</b> MB.	abytes to be
	Base Memory Size	512 MB
	< <u>B</u> ack <u>N</u> ext >	Cancel

Give the machine however much memory you want to. It defaults to 384M. I bumped mine up a little.

🞯 Create New Virtual I	Machine 2 X
Virtual Hard Dis	k
	Select a hard disk image to be used as the boot hard disk of the virtual machine. You can either create a new hard disk using the <b>New</b> button or select an existing hard disk image from the drop-down list or by pressing the <b>Existing</b> button (to invoke the Virtual Media Manager dialog). If you need a more complicated hard disk setup, you can also skip this step and attach hard disks later using the VM Settings dialog. The recommended size of the boot hard disk is <b>8192</b> MB. <b>V</b> Boot Hard <u>D</u> isk (Primary Master)
	<ul> <li>Use existing hard disk</li> </ul>
TANE	
	< <u>B</u> ack <u>N</u> ext > Cancel

We need to create a new virtual hard disk to use.

🧐 Create New Virtual	Disk ? X
Hard Disk Stora	аде Туре
6	Select the type of virtual hard disk you want to create. A <b>dynamically expanding storage</b> initially occupies a very small amount of space on your physical hard disk. It will grow dynamically (up to the size specified) as the Guest OS claims disk space.
	A <b>fixed-size storage</b> does not grow. It is stored in a file of approximately the same size as the size of the virtual hard disk. The creation of a fixed-size storage may take a long time depending on the storage size and the write performance of your harddisk.
	<ul> <li>Dynamically expanding storage</li> <li>Fixed-size storage</li> </ul>
	< <u>B</u> ack <u>N</u> ext > Cancel

Choose a dynamic disk.

Section Create New Virtual	Disk ? X
Virtual Disk Loo	cation and Size
	Press the <b>Select</b> button to select the location of a file to store the hard disk data or type a file name in the entry field.
	Ubuntu
	Select the size of the virtual hard disk in megabytes. This size will be reported to the Guest OS as the maximum size of this hard disk. Size 4.00 MB 2.00 TB
	< <u>B</u> ack <u>N</u> ext > Cancel

Give the disk some size. The default is 8G which is too small. Bump the size up to something usable.



When back at the main screen, click the Display option.

Obuntu - Settings	🤿 😳 1895
📃 General	Display
🔝 System	
🖳 Display	<u>V</u> ideo <u>R</u> emote Display
😂 Hard Disks	Video Memory:
O CD/DVD-ROM	1MB
💾 Floppy	Extended Features: 📝 Enable <u>3D</u> Acceleration
Dr. A.F.	

Check the box to enable 3D acceleration. The click OK.



Click the CD/DVD-ROM option.

5	🔅 UK	ountu - Settings	-> 0 1mm
		General	CD/DVD-ROM
		System	
	Q	Display	Mount CD/DVD Drive
	9	Hard Disks	Host CD/DVD <u>D</u> rive
	$\odot$	CD/DVD-ROM	D:
l	H	Floppy	Enable Passthrough
	₽	Audio	ISO Image File
	5	Network	VBoxGuestAdditions.iso (30.88 MB)

Mount the CD rom so we can install Ubuntu. Click OK.



Click the Network option.

Obuntu - Settings	8
📃 General	Network
System	
🖳 Display	Adapter 1 Adapter 2 Adapter 3 Adapter 4
😂 Hard Disks	Enable Network Adapter
CD/DVD-ROM	Adapter Type: PCnet-FAST III (Am79C973)
E Floppy	(Attached to: NAT
🖗 Audio	Not attached
Network	Name NAT
🔊 Serial Ports	Internal Network
🖉 USB	Host-only Adapter
Shared Folders	

The Default option is NAT. This option uses your computer as a DHCP server to assign private IP addresses to the Virtual Machine. This option works well for companies that use device filtering at the MAC address level to get on their networks. If you want to be able to communicate with your Virtual Machine over the network, then select the Bridged Adapter option. This will use the DHCP server on your network to assign an IP address to your Virtual Machine. If you need to you can configure the IP address of the Linux Virtual Machine manually (static route).



Next click Serial Ports. We need to enable the serial port. Note: The following instructions came from the following website: <u>http://techtooltip.wordpress.com/2008/09/12/using-host-serial-port-from-guest-in-virtual-box/</u>



This option is only needed if you will be working with Serial devices such as embedded device programming. If you don't need access to the serial port, skip this step.

Check the Enable Serial Port option. Select the COM number to report to the Virtual computer. Select Host Device as the option. Then for the Port/File Path, enter the name of the real COM port on your Windows box to connect the virtual com port to. If you are using a USB Com port device, enter its com number in the box. If you aren't sure what the COM number is, go to the control panel in Windows and run the System option and find the Device Manager. It will tell you which COM number your USB adapter is at.

#### Now insert the Ubuntu CD into the computer. Cancel the auto-run window.



Now start the Virtual machine by clicking the Start button.

🦻 Virtu	alBox - Information
0	The virtual machine window is optimized to work in <b>32 bit</b> color mode but the color quality of the virtual display is currently set to <b>16 bit</b> .
	Please open the display properties dialog of the guest OS and select a <b>32 bit</b> color mode, if it is available, for best possible performance of the virtual video subsystem.
	<b>Note</b> . Some operating systems, like OS/2, may actually work in 32 bit mode but report it as 24 bit (16 million colors). You may try to select a different color quality to see if this message disappears or you can simply disable the message now if you are sure the required color quality (32 bit) is not available in the given guest OS.
	Do not show this message again
	ОК

Check the box and click OK

#### Installing Ubuntu in a Virtual Machine

🐕 Ubuntu [Running] - Sun VirtualBox						
Machine Devices Help						
Language						
Amharic	Hebrew	Polski				
Arabic	Hindi	Português do Brasil				
Беларуская	Hrvatski	Português				
Български	Magyar	Română				
Bengali	Bahasa Indonesia	Русский				
Bosanski	Italiano	Sámegillii				
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)					
F1 Help F2 Language F3 Keymap	F4 Modes F5 Accessi	oility F6 Other Options	S			
😂 💿 🗗 🖉 🔝 🧐 Bight Ctrl 🚊						

Select your language and press Enter.



Using the arrow keys, select Install Ubuntu and press OK.

📝 Ubuntu [Running] - Sun Virtuall	Box	
Machine Devices Help		
عربي	^	Welcome
Беларуская	_	Ready to install? Once you answer a few questions, the
Български		contents of the live CD can be installed on this computer
বাংলা		so you can run the system at full speed and without the
Bosanski		CD.
Català	=	Answering the questions should only take a few minutes.
Čeština		Disease shares the language used for the installation
Cymraeg		process. This language will be the default language for the
Dansk		final system.
Deutsch	-	
Ελληνικά		
English		
Esperanto		
Español		
Euskara		
Suomi		
Français		Ν
Gaeilge		4
Galego		
ગુજરાતી		notes for information on problems that may
עברית		affect you.
हिन्दी		Release Notes
Hrvatski	~	
Step 1 of 7		
		😂 🙂 🗗 💭 🛄 💟 🛃 Right Ctrl 🖉

To use the Virtual Machine, click inside with your mouse and your mouse control will be passed to the Virtual Machine. To get your mouse cursor back, look in the lower right-hand corner of the Virtual Box window. It will tell you the key to press to get out of the Virtual Machine. The default is the RIGHT ctrl key. I highlighted it so you can see where to look.

Press the Forward button.

Where are you?	
Select your time zone from the map, or by region and city.	
	\$
Region: America V City: Los Angeles	×
Step 2 of 7	Quit $4abc Back forward$

Click the area on the map where you live and press Forward.

When asked about your keyboard style, if using English, accept the defaults and click Forward.

🦻 Ubuntu [Running] - Sun VirtualBox	
Machine Devices Help	
Prepare disk space	
This computer has no operating systems on it.	
Where do you want to put Ubuntu 9.04?	
O Use the entire disk	3
SCSI1 (0,0,0) (sda) - 21.5 GB ATA VBOX HARDDISK	▼
<ul> <li>Specify partitions manually (advanced)</li> </ul>	
	Ubuntu 9.04
Step 4 of 7	Quit $ = \underline{B}ack $ Eorward
	🎯 💿 🗗 🖉 🗂 💷 🖉 Right Ctrl

Use the default to use the entire disk and press Forward.

🔗 Ubuntu [Running] - Sun VirtualBox	The second se	
Machine Devices Help		
Who are you?		
What is your name?		
John Doe		
What name do you want to use to log in?	<b>F</b> 3	
john		
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 mixture of letters, numbers and punctuation, should be a regular intervals.	I for typing errors. A good password will contain a t least eight characters long, and should be changed at	
What is the name of this computer?		
omniflash-development		
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 $4Back$	<b>E</b> orward
		🏈 💽 Right Ctrl 💡

Fill in your name and password. Change the name of the computer to something useful. This is the name that will be seen on the network.

I checked the box to log in automatically. This is just my preference. If you choose t o require a password, you will be asked to provide your username and password to log it. You can always change the option once you have installed Ubuntu.

💓 Ubuntu [Running] - Sun VirtualBox	and and	-	_ O X
Machine Devices Help			
Ready to install			
Your new operating system will now be installed with the following settings:		I	
Language: English Keyboard layout: USA Name: La 'and '''''''''' Login name: La''''''''''''''''''''''''''''''''''''			
If you continue, the changes listed below will be written to the disks. Otherwise, you will be able to make further changes manually. WARNING: This will destroy all data on any partitions you have removed as well as on the partitions that are going to be formatted. The partition tables of the following devices are changed: SCSI1 (0,0,0) (sda) The following partitions are going to be formatted: partition #1 of SCSI1 (0,0,0) (sda) as ext3 partition #5 of SCSI1 (0,0,0) (sda) as swap			
			Advanced
Step 7 of 7	Quit	<u>← B</u> ack	Install

Click the Install button.

If your screen goes totally black as you are waiting for it to finish, it is most likely the screen saver. Click inside the Virtual machine and move the mouse. You should get a window back.



Click the Restart Now button.



In order to remove the CD, we have to unmount it. Click the Devices -> Unmount CD/DVD-ROM option. Then you can remove the CD. Click inside the Virtual Machine and press Enter to reboot.

# **Configuring Ubuntu (All boot options)**



The first thing you will notice is that your screen size is 800 X 600. Since Ubuntu cannot determine your graphics card type, we need to configure the screen settings so we can get to 1024 X768 (or higher). We need to apply all the updates so we can override the screen settings. Open the Update Manager.

To launch the Update Manager if it doesn't load automatically (or any time you want to check for updates),



Click System->Administration -> Update Manager.

<b>e</b>	Update Manager 📃 🗆 🗙		
	Software updates are available for this computer If you don't want to install them now, choose "Update Manager" from the Administration menu later.		
	Important security updates		
V	acpid Utilities for using ACPI power management (Size: 32 KB)		
•	apport automatically generate crash reports for debugging (Size: 109 KB)		
V	apport-gtk GTK+ frontend for the apport crash report system (Size: 66 KB)		
•	bind9-host Version of 'host' bundled with BIND 9.X (Size: 59 KB)		
	cron management of regular background processing (Size: 81 KR)		
Download size: 143.6 MB Check VInstall Updates			
₽□	Description of update		
Set	tings		

Click the Install Updates button. Supply your password when prompted. Note, if you click the Settings... button, you can configure the Auto Update feature to automatically download and install updates.

Note: If your company has a Proxy server set up for Internet access, you will have to configure Ubuntu for the proxy settings in order to get the Update Manager working.

To set up the proxy settings,



Click on System -> Preferences -> Network Proxy and fill out the settings for your proxy server.

🥐 Ubuntu [Running] - Sun VirtualBox	X
Machine Devices Help	
Applications Places System	🔤 Sun Aug 30, 12:00 AM
Opdate Manager _ D X	
Your system is up-to-date	equired
The package information was last updated less than one hour ago.	mplete the update of your system it needs to
	o, security updates may not be fully applied, d or supported hardware may not function ices may not be available.
	sure that you save all of your work before
	Restart Later
Check Install Updates	12
Description of update	
Settings	
🗐 🗄 🕃 Update Manager 🛛 🔝 Restart Required	
	😂 💿 🗗 🖉 🚍 🔟 🛛 😕 💽 Right Ctrl 💡

Click Close and then **Restart Now**.

#### **Installing the Guest Additions (Virtual Machine only)**



Next we need to install the Guest Additions. Click Devices -> Install Guest Additions...



The additions will show on your desktop. Double-click this icon to open up the installation directory.

🤗 Ubuntu [Running] - Sun '	/irtualBox	3	- 1	1.0	1000	
Machine Devices Help						
Applications Pla	ces System 🍯	) 🛛 🕑	2			
		cdrom	0 - File Brows	er		
<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>G</u>	<u>B</u> ookmarks	<u>T</u> abs	<u>H</u> elp			
Back Forward	∲ Up	Stop	C Reload	Fome	Computer	لَي Searc
Location: /m	edia/cdrom0				🧠 100% ©	Icon
Places → 🛛						
🔲 Desktop	32Bit	t	64Bi	it	autorun	.sh
🔜 File System	;					

NOTE: Installing this way with Virtual Box 3.04 made the screen refresh quite slow I recommend installing with the optional instructions below until Sun fixes this.

I show it merely for reference on the preferred way to install the guest additions.

Double-click on the autorun.sh file.

Enter your password.

		×
?	Do you want to run "autorun.sh", or display its contents?	
	"autorun.sh" is an executable text file.	
Run in	Terminal Display Scancel Run	

Now click the Run button.



If successful, you should see a window similar to this. Press Return to close the window and read on before you Restart the system.

# Optional setup for Guest Additions installation or Guest Additions that run a bit strange in a virtual machine - (Preferred method)

If we find the guest additions running a bit strange (like slow graphics or ghosting artifacts), follow these manual steps.

#### This way works much better.

The following procedure was taken from the following website. <u>http://www.ubuntugeek.com/ubuntu-904jaunty-and-virtualbox-video-driver-for-xguest-additions.html</u>



Open a terminal from the Applications ->Terminal

📧 🖄 @omniflash-development: /media/cdrom0 📃 🗆 🗙
<u>File Edit View Terminal Help</u>
1 n@omniflash-development //media/cdrom0s     ls       32Bit     VBoxLinuxAdditions-amd64.run       VBoxWindowsAdditions.exe
64Bit VBoxLinuxAdditions-x86.run VBoxWindowsAdditions-x86.exe AUTORUN.INF VBoxSolarisAdditions.pkg
<pre>autorun.sir vBoxwindowsAdditions-amdd4.exe</pre>
Verifying archive integrity All good. Uncompressing VirtualBox 3.0.4 Guest Additions for Linux installation
VirtualBox 3.0.4 Guest Additions installation Building the VirtualBox Guest Additions kernel module Installing the VirtualBox Guest Additions
Disabling dynamic resizing as the X server is configured to only use static resolutions. To fix this, edit the server configuration file, remove all "Modes" lines from the "Screen" section and any Option "PreferredMode" lines from "Monitor" sections and restart the server.
Successfully installed the VirtualBox Guest Additions. You must restart your guest system in order to complete the installation. 

Type cd /media/cdrom0

Type **Is** to see a listing of the files

Next, install the additions by typing

#### sudo sh ./VBoxLinuxAdditions-x86.run x11

This is the end of the optional installation steps.

The display settings should be correct now. Continue on with the instructions from here.

#### Unmounting the Guest Additions and Restarting the system

To unmount the VBOX additions, remount the CD Rom by clicking Devices -> Mount CD/DVD-ROM -> Host Drive D: (or E: or whatever your CD drive is).

🦻 Ubuntu [Running] - Sun VirtualBox	
Machine Devices Help	
App ( Mount CD/DVD-ROM  Host Drive D:	)
:14 AM	
Guest session	
Lock screen	
Log Out	
Hibernate	
Bestart	
Shut Down	
Now Shut Down	



From the Sun Virtual Machine console, click on CD/DVD-ROM and verify the CD drive is mounted. Press

#### OK and then restart the Virtual Machine.

**Setting the Screen Resolution (All versions)** 

📝 Ubuntu [Running] - Sun Virtu	alBox	1	1.16 P. 10
Machine Devices Help			
Applications Places	System 🥹 😒 🖓		
	💥 Preferences	>	🗑 About Me
	💥 Administration	>	🗊 Appearance
	Help and Support		Assistive Techn
	👸 About GNOME		Bluetooth
	- About Ubuntu		🗎 Default Printer
		НH	Display

Click on System -> Display to set your desired screen resolution.



Choose a desired resolution to run at. (Your list may look a little different from this).

### When the Resolution doesn't change

If doing this within Virtual Box and you don't get these options, double-check that in installed your Guest Additions correctly.

If you physically installed Ubuntu on your computer (like a laptop or a PC) and not in a Virtual machine and your screen resolution is only 800x600, then follow these steps to (try to) override it.

The details about how to do this were taken from this website: http://ubuntuforums.org/showthread.php?t=1153437



We need a Terminal to set the display.



First backup the original file

#### sudo cp /etc/X11/xorg.conf /etc/X11/xorg.conf.bak

It will prompt you for your password. Since we are trying to change system files, we have to use pseudo root access. This is what <u>sudo</u> does for us. It runs this command as pseudo root.

	ı@omniflash-development: ~ 📃 🗖	×
<u>F</u> ile	<u>E</u> dit <u>V</u> iew <u>T</u> erminal <u>H</u> elp	
k [sudo	<pre>@omniflash-development:~\$ sudo cp /etc/X11/xorg.conf /etc/X11/xorg.conf.] ] password for i : .@omniflash-development:~\$ gksudo gedit /etc/X11/xorg.conf</pre>	ba

Next we have to edit the configuration file **gksudo gedit /etc/X11/xorg.conf** 

	xorg.conf (/etc/X11) - gedit	×		
<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>S</u> earch	<u>T</u> ools <u>D</u> ocuments <u>H</u> elp			
New Open Save P	rint Undo Redo Cut Copy Paste Find Replace			
🖹 xorg.conf 🛛				
<pre># Note that some configuration settings that could be done previously # in this file, now are automatically configured by the server and settings # here are ignored. #</pre>				
<pre># If you have edited th # again, run the follow # sudo dpkg-reconfigu</pre>	his file but would like it to be automatically updated wing command: wre -phigh xserver-xorg			
Section "Device" Identifier EndSection	"Configured Video Device"			
Section "Monitor" Identifier EndSection	"Configured Monitor"	Ш		
Section "Screen" Identifier "Default Screen" Monitor "Configured Monitor" Device "Configured Video Device" EndSection				
	Plain Text V Tab Width: 8 V Ln 1, Col 1 INS			

This is what the default file looks like. We are going to add a section to it.

We need to turn off line wrapping. Click Edit ->Preferences

2	gedit Preferences	×
View	Editor Font & Colors Plugins	
Tex	t Wrapping	
	Enable text <u>w</u> rapping	
	Do not <u>s</u> plit words over two lines	
Lin	e Numbers	
0	Display line numbers	
Cur	rrent Line	
0	] Highlight current line	
Rig	ht Margin	
0	Display right <u>m</u> argin	
R	ight margin at column: 80 💭	
Bra	ocket Matching	
0	Highlight matching <u>b</u> racket	
	Help	lose

Uncheck Enable text wrapping.

×xor	g.conf (/etc/X11) - gedit
<u>File Edit View Search Tool</u>	s <u>D</u> ocuments <u>H</u> elp
New Open ~ Bave Print	Sedo Cut Copy Paste Find Replace
*xorg.conf	
<pre># If you have edited this f: # again, run the following # sudo dpkg-reconfigure -</pre>	ile but would like it to be automatically updated command: phigh xserver-xorg
Section "Device" Identifier "Con EndSection	nfigured Video Device"
Section "Monitor" Identifier "Con EndSection	nfigured Monitor"
Section "Screen" Identifier "De Monitor "Con Device "Con	fault Screen" nfigured Monitor" nfigured Video Device"
SubSection "Dis	splay"
Modes "640	0x480" "800x600" "1024x768" "1280x1024"
EndSubSection	
EndSection	
	Plain Text V Tab Width: 8 V Ln 36, Col 25 INS

Add the following lines to the file. Case is important on the letters. Make sure you press the **TAB** key **ONCE** to move the cursor to the start locations then use spaces to get it to align somewhat like shown above. There needs to be only **ONE tab** character on the beginning.

SubSection "Display" Depth 24 Modes "640x480" "800x600" "1024x768" "1280x1024" EndSubSection

Now click **Save** and then close the editor. You can close the terminal as well. We need to **reboot** in order to make the settings available.



Click your name.

#### Now Restart.

Now you should be able to change your display settings.

🤗 Ubuntu [Running] -	Sun Virtua	IBox		116 Berlin 188	
Machine Devices	Machine Devices Help				
Applications	Places	System 🥹 🔄 🖓			
		K Preferences	>	🗑 About Me	
		💥 Administration	>	👔 Appearance	
		Help and Support		Assistive Techn	
		About GNOME		Bluetooth	
		About Ubuntu		🚊 Default Printer	
		V About Obuntu	нŋ	Display	

Click on System -> Display to set your desired screen resolution.

	Display Pref	ferences	×
	Drag the monitors to	set their plac	e
	Unkno	wn	
<u>Mirror screens</u> <u>Monitor: Unkno</u>	s own		Detect Monitors
<ul> <li>On</li> <li>C</li> <li>Resolution:</li> <li>Panel icon</li> <li>Show disp</li> </ul>	1360 x 768 (16:9) 1152 x 864 (4:3) 1024 x 768 (4:3) 800 x 600 (4:3) 640 x 480 (4:3)	efresh rate:	60 Hz 🗸
		✓ A	pply Close

Choose a desired resolution to run at. (Your list may look a little different from this).

#### Additional software to make Ubuntu usable

The system is now usable, but there are some programs and drivers that make Ubuntu work a lot better and make it more compatible with websites and all around life.

#### Synaptic Package Manager

Most software is easily installable via the Synaptic Package Manager. This manager lets us Install, Reinstall or Uninstall software packages and drivers.



Click System -> Administration -> Synaptic Package Manager.

sy Sy	naptic Package Manager	_ <b> </b>
<u>File Edit Package Setting</u>	s <u>H</u> elp	
E Coad Mark All Upgrade	es Apply Properties Quick search	~
All	S Package Installed Ver	rsion   Late
firefox-3.5	firefox-3.5-dbg	3.5.2
	firefox-3.5-dev	3.5.2
	firefox-3.5-gnome-support	3.5.2 😑
	[ (firefox-3.5)	3.5.2
	Unmark	>
	Mark for Installation	lla 🔶
K III )	Mark for Reinstallation	
Sections	Mark for Degrade	liar user
Status	Mark for Complete Removal	
Origin	Roperties	rom
Custom Filters	Mark Recommended for Installation >	
Search Results	Canonical does not provide updates for firefox-	3.5. Some 👻
12 packages listed, 1178 instal	ed, 0 broken. 0 to install/upgrade, 0 to remove	

Using the Quick search, we will look for certain packages to install.

- 1.) Type the name into the Quick search.
- 2.) Click the box next to the package to install. A list of options will pop up.
- 3.) Mark for Installation the package.



When asked about additional packages, click the Mark button.

ର୍କ୍ତ 5)	naptic Package Manager		. 🗆 🗙
<u>File Edit Package Setting</u>	s <u>H</u> elp		
E Coad Mark All Upgrad	es Apply Properties Quick s	search (-3.5	~
All	S Package	Installed Version	Late ^
firefox-3.5	firefox-3.5-dbg		3.5.2
	firefox-3.5-dev		3.5.2
	firefox-3.5-gnome-support		3.5.2 =
	(S) firefox-3.5		3.5.2

Notice our option now contains an arrow indicating that we want to install this package.

If the Quick search doesn't list what we are looking for, then we can use the search button.

3	Synaptic Package Manager	_ 🗆 🗙
<u>F</u> ile <u>E</u> dit <u>P</u> ackage <u>S</u> et	tings <u>H</u> elp	
E 👶 😡 Reload Mark All Upg	rades Apply Properties Quick search	Ý
All	S Package Installed Version	Latest '
firefox-3.5	flashplugin-nonfree-extrasoun	0.0.svn
flash	flashplugin-nonfree	10.0.32
flashplugin	Find	10.0.32
< III Sections Status	Search: flashplugin Look in: Description and Name $\diamondsuit$ Search	>
Origin		
Custom Filters		
Search Results		
3 packages listed, 1178 inst	alled, 0 broken, 3 to install/upgrade, 0 to remove: 28.0 MB v	will be used

Click the down arrow to the right of the Quick search. Type in a piece of what you are looking for and press the search button. Also, if your list doesn't return anything, make sure you click the **ALL** button on the left side of the screen. This is a filter.

Here are the packages that I think are a minimum for a good operating system experience: Note: Some of this was taken from the website:

http://theindexer.wordpress.com/2009/04/24/to-do-list-after-installing-ubuntu-904-aka-jaunty-jackalope/

#### The software list

- 1.) firefox-3.5 (or whatever the latest version is). Ubuntu 9.04 comes with version 3.0
- 2.) flashplugin-installer (Adobe Flash player)
- 3.) sun-java6-bin (Java Run time and compiler)
- 4.) sun-java6-plugin (java web brower plugin)
- 5.) gstreamer0.10-plugins-bad (streaming audio codecs)
- 6.) gstreamer0.10-plugins-ugly (more streaming audio codecs)

- 7.) gstreamer0.10-ffmpeg (even more streaming audio codecs)
- 8.) **gparted** (if you want to be able to resize your partitions)
- 9.) **compizconfig-settings-manager** (Cool desktop effects like desktop cube, etc. Works best when not in a virtual machine.)
- 10.)screenlets (Similar to Windows Vista's gadgets. Has a clock, calendar, temperature, etc.)
- 11.) **wine** (This is optional. This allows many Windows programs to be installed and run under Linux.

#### **Software list for developers**

If you want to develop C programs and / or want to interface to embedded systems (via the serial port), here are some more programs that are needed.

- 1.) **g++** (The C++ compiler)
- 2.) **codeblocks** (A really nice editor)
- 3.) codeblocks-contrib (Add-ins for codeblocks)
- 4.) **cutecom** (Serial client for X, Y, and Z modem file transfers)
- 5.) **Irzsz** (Underlying program used by cutecom)
- 6.) **putty** (Nice terminal program)
- 7.) gtkterm (This can be installed instead of putty or install both)
- 8.) xutils-dev (tools like makedepend, etc.)

#### **Installing the selected packages**



Once we have selected all the packages we want, click the Apply button.

-	Summary	
	Apply the following changes	?
	This is your last opportunity to look thr of marked changes before they are app	ough the list plied.
	To be installed	
	Summary 89 new packages will be installed 284 MB of extra space will be used 104 MB have to be downloaded	<u>S</u> how Details
	Download package files only	
	<b>E</b> ancel	Apply

Click the Apply button here also.



Sit back and wait while everything is downloaded.

Applying Changes	×
Installing software	
The marked changes are now being applied. This can take some time. Please wait.	
Configuring flashplugin-installer	
Automatically close after the changes have been succession	essfully applied
▷ Details	
	<b>X</b> <u>C</u> lose

Watch everything be installed.



Click close when it's done. Then close the package manager.



Even though it doesn't say so, we need to **Restart** so all the icons show up correctly.

#### Finding the applications we installed



You may be asking yourself where everything ended up. Under Accessories, you will find **Screenlets** and **gtkterm**.



Under Internet you will find **PuTTY** and **Firefox 3.5**.



Under Programming you will find **Code::Blocks** Code editor.

🦻 Ubuntu [Running] - Sun Virt	ualBox
Machine Devices Help	
Applications Places	System 🕹 🔄 🕢
Accessories	>
Games	>
Graphics	>
lnternet	> SERVICE STREET, STREE
0ffice	> <
👌 Programming	>
5 Sound & Video	>
🖠 Wine	> Programs > Accessories > 🛃 Notepad
Add/Remove	Browse C:\ Drive     Configure Wine
	C Uninstall Wine Software

Under Wine, you will find the Windows emulation software. You need to configure Wine the first time and enable the audio device. Click **Configure Wine** to do this.

📝 Ubuntu [Running] ·	Sun Virtua	alBox	1		
Machine Devices	Help				
Applications	Places	System	8	2 🕜	
	Wine	configura	ation		X
Drives Applications	Libraries	Audio   Graphic	<b>)</b>   s	About Desktop Integra	ation
	Wine	configura	ation		×
A reco You ca	is no audio c mmended dr n use this dr ust click Appl	inver currenti iver has been river or select ly for the sele	y speciri i selecte another	ed in the registry d for you. r driver if availabl take effect	'.  e.

Click the Audio tab and the following dialog box will appear. Click OK. Then click OK to close the Wine control panel.

Applications	Places	System 🥹 🔶 🕢		
		💥 Preferences	>	🗑 About Me
		💥 Administration	>	👔 Appearance
		Help and Support	S Assistive Technologies	
		About GNOME		Bluetooth
				CompizConfig Settings Manager
				Default Printer

The CompizConfig Setting Manager is on the preferences bar. This controls a lot of different graphics options which are beyond the scope of this document (but really neat).

Applications	Places	System 🥹 🖂 🕢		
		K Preferences	>	
		💥 Administration	>	$\mathcal{P}_{\mathcal{P}}$ Authorizations
		Help and Support		🥖 Computer Janitor
		About GNOME		Hardware Drivers
		About Ubuntu		阿 Language Support
				D Log File Viewer
				🛒 Login Window
				🛄 Network Tools
				Partition Editor
				崖 Printing

Gparted is on the Administration tab called Partition Editor. You can edit Windows partitions as well as Linux ones.

The Hardware Drivers option is for installing special drivers - like Graphics card drivers. If you installed Linux outside of a Virtual Machine onto a real machine and you have an NVidia graphics card, press this button to download the graphics drivers from NVidia for Linux. This really makes the Compiz options work well.

#### Updating the link for the web browser

The last recommendation I have is the change the launch icon for Firefox to the latest version we just downloaded.



Right-click on the Applications button and choose Edit Menus.



Select Internet -> Shiretoko Web Browser (or whatever the new browser is that you downloaded). Click the Properties button.

F	Laur	cher Properties	×
	<u> </u>	Application	~
	<u>N</u> ame:	Shiretoko Web Browser	
	Comm <u>a</u> nd:	firefox-3.5 %u Bro	wse
	Co <u>m</u> ment:	Firefox 3.5	
<u>e</u> Hel	p	<u>Bevert</u>	lose

**Take note** of the Command line. For Firefox 3.5, the command line is **firefox-3.5 %u** We can close out of the Launcher Properties and the Main Menu editor.

Applications	Places	System	<b>()</b> 2 <b>()</b>
			<u> </u>
			<u>Remove From Panel</u> <u>M</u> ove
			☑ Loc <u>k</u> To Panel

Right-click on the icon for Firefox 3.0 and click properties.

Launcher Properties				
	<u> T</u> ype:	Application	-	
	<u>N</u> ame:	Firefox Web Browser		
Command: [firefox %u] Browse				
	Co <u>m</u> ment:	Browse the World Wide Web		
@ <u>H</u> e	lp	<u>R</u> evert <u>Close</u>		

Change the command line from firefox %u

то

	Laur	cher Properties	×
	<u>Т</u> уре:	Application	-
	<u>N</u> ame:	Firefox Web Browser	
	Comm <u>a</u> nd:	firefox-3.5 %u Browse.	
	Co <u>m</u> ment:	Browse the World Wide Web	
<u>o</u> <u>H</u> el	p	Revert Close	•

The command we saw for the latest version of Firefox which in this case is **firefox-3.5**. Click **Close**.

Now when you click this button, Firefox 3.5 will launch instead of firefox 3.0. (Note, web links will still open with Firefox 3.0 as we didn't change the file association for those.)

Note: If your company has a Proxy server for internet access, you will have to configure Firefox to use the proxy server.

If you like to have the temperature shown on your desktop or if you travel to different timezones, you can enable multiple timezones in Ubuntu.



Click your Date/Time button. Then click the drop down arrow by Locations and click the Edit button.

Clock Preferences	×
General Locations Weather	
수 <u>A</u> dd	
Edit	
<u> </u>	
Image: Market Back of the sector of the s	

Click the Locations tab if it isn't already selected. Click the +Add button to add a location.

•		×
Location Name:	Sacramento, California, United States	
	Type a city, region, or country name and then select a match from the pop-up.	
Timezone:	Pacific Time (GMT-8 / GMT-7)	<b>~</b>
Latitude:	38.506943 North	✓ (optional)
Longitude:	121.495003 West	✓ (optional)
	<b>S</b> <u>C</u> ancel	<b>○</b> K

Type a major city in the Location Name: box that is near you. The press OK.

Then click the OK button and then the Date/Time button at the top of the screen.



Voila! Weather information for your area. You can add multiple Location areas and then switch back and forth as you travel.

#### **Final Notes**

There you have it. How to install Ubuntu and get it working. I hope you enjoy your Linux environment.

If you installed Ubuntu inside a Virtual Machine, you can export this machine to another computer and it will be all set up ready to go. The only thing you have to install Sun's Virtual Box on your Windows system and then import the machine and configure the Virtual Machine's settings.