

Ghacks Linux December 2008

This is a collection of all Linux articles that have been published on Ghacks.net in December 2008. You can check all new Linux articles at [Ghacks](#).

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[Abiword: A Lean Word-processing Machine](#)

I like my tools to be efficient. Part of efficiency is opening quickly, not sucking up all of my systems' resources, and saving in various formats. When considering office needs one of the first tools that pops into my mind is word processing. Naturally the masses will first turn to either MS Office or OpenOffice. But there is another alternative that can do the job faster, easier, and without hogging up your system resources. That alternative? Abiword. In this article you will learn how to install and and run Abiword.

Abiword is considered part of the GNOME Office Suite, but does not require GNOME to be running to use. Abiword is also available for Microsoft Windows. Abiword is available for most distributions and can be installed by both traditional routes. The first, and easiest method, is to open up your Add/Remove Software application (such as Ubuntu's Synaptic), do a search for Abiword. What should appear is a list of possible matches. The following are the packages you need to install.

- abiword
- abiword-help
- abiword-plugin-mathview
- abiword-plugin-grammar
- abiword-common
- libgtkmathviewOc2a

Select those and click Apply to begin the installation.

Once installed you will find the Abiword entry in your desktops' Office sub-menu. If you are using a desktop such as Enlightenment you may have to click Ctrl-Left Mouse Button (to make the Maintenance menu entry appear) and click Regenerate Menus to make Abiword appear. Once the menus have regenerated Abiword should be found in the Other menu in the Office sub-menu entry.

When Abiword opens what you will find is an efficient, well thought-out word processor that has everything you need to create solid, professional documents. You will also find some nice additions that make your writing even easier. One such tool is the Wikipedia entry tool. With a word highlighted you click the Wiki Encyclopedia entry and it will open the Opera browser on the Wiki entry of the highlighted word. There is also a Collaborate tool that allows users to collaborate on documents through Jabber. Of course Cisco purchased Jabber so who knows if collaboration with Abiword is going to be possible. The good news is you can do collaboration with a direct TCP connection (we'll go into this in my next article.)

Final Thoughts

I have used Abiword and in the past have thought it had a ways to go before it was production ready. Well, that time has come. Abiword is certainly worthy of being your word processor of choice.

[Add mp3 support in Fedora 10](#)

One of more frustrating aspects of some modern Linux distributions is that they do not ship with mp3 support rolled in. This is, by design, done because of licensing issues. And granted using the ogg format is a much better solution in the end (as well as a much better sounding format) but for those of us who have massive amounts of mp3 files already located on multiple hard drives converting to ogg format would be a very time consuming option. To that end it is nice to be able to have mp3 support native on your machine.

Fortunately that is not difficult. And even more fortunate, here are the instructions.

The first thing you need to do is close out all applications that might want to make use of an mp3 file. This could include Rhythmbox, Amarok, Banshee, or xmms. Now open a terminal window because you are going to be issuing some commands in a moment. Once the terminal window is open you will first need to *su* to root. With root privileges it is time to get down to business.

The first set of commands to run will install the necessary repositories for yum to use. First issue:

```
rpm -ivh http://download1.rpmfusion.org/free/fedora/rpmfusion-free-release-stable.noarch.rpm
```

Once that command completes issue:

```
rpm -ivh http://download1.rpmfusion.org/nonfree/fedora/rpmfusion-nonfree-release-stable.noarch.rpm
```

Now it's time to install the actual plugins for support. Issue the command:

```
yum -y install gstreamer-plugins-bad gstreamer-plugins-ugly xine-lib-extras-nonfree
```

Now your system will allow mp3 playback in the major players. But there is still no xmms. To install xmms with mp3 support issue the following command:

```
yum install xmms xmms-mp3
```

Once this is finished your machine is all ready for full-blown mp3 playback in just about every type of application.

Final Thoughts

Yes it's true it would be nice if the major Linux distributions could ship with mp3 support built in. But that is not the case due to licensing. Fortunately getting this working is as simple as a few commands.

[An Illustrated Guide to Installing Ubuntu Desktop](#)

I have had a number of requests for a step by step walk through of a Linux installation. I thought this would be a great way to illustrate how simple installing Linux is. I have chosen Ubuntu because it is a good example of how far the Linux installation process has come. This installation will be done using Ubuntu 8.10 Live.

You will need to download a copy of the ISO image that best suits your architecture. If you have a 64 bit machine you can install either 32 or 64 bit. My advice is to stick with 32 bit, otherwise you will have to wrestle with plugins for Firefox to the point where you will (after pulling out much hair) most like re-install with 32 bit.

Step One

The first thing you need to do is put the burned cd into your drive and reboot your machine (making sure it boots from the CD and not the hard drive.)



Use the up and down arrow keys to select the right language. Once you have the right language chosen hit the enter key to move on.

Step Two

Now it's time to choose your method. I want to boot into the LiveCD in order to show how simple this is.



Try Ubuntu without any change to your computer
Install Ubuntu
Check CD for defects
Test memory
Boot from first hard disk

Press F4 to select alternative start-up and installation modes.

F1 Help F2 Language F3 Keymap F4 Modes F5 Accessibility F6 Other Options

Since this is a LiveCD you can run the operating system from the CD (using the PC's RAM). Once the operating system is up and running you can install it from that point.

During the boot up process you will see the process bar for a while. Depending upon how much RAM you have and how fast your CD drive is, this could take a while.

Step Three

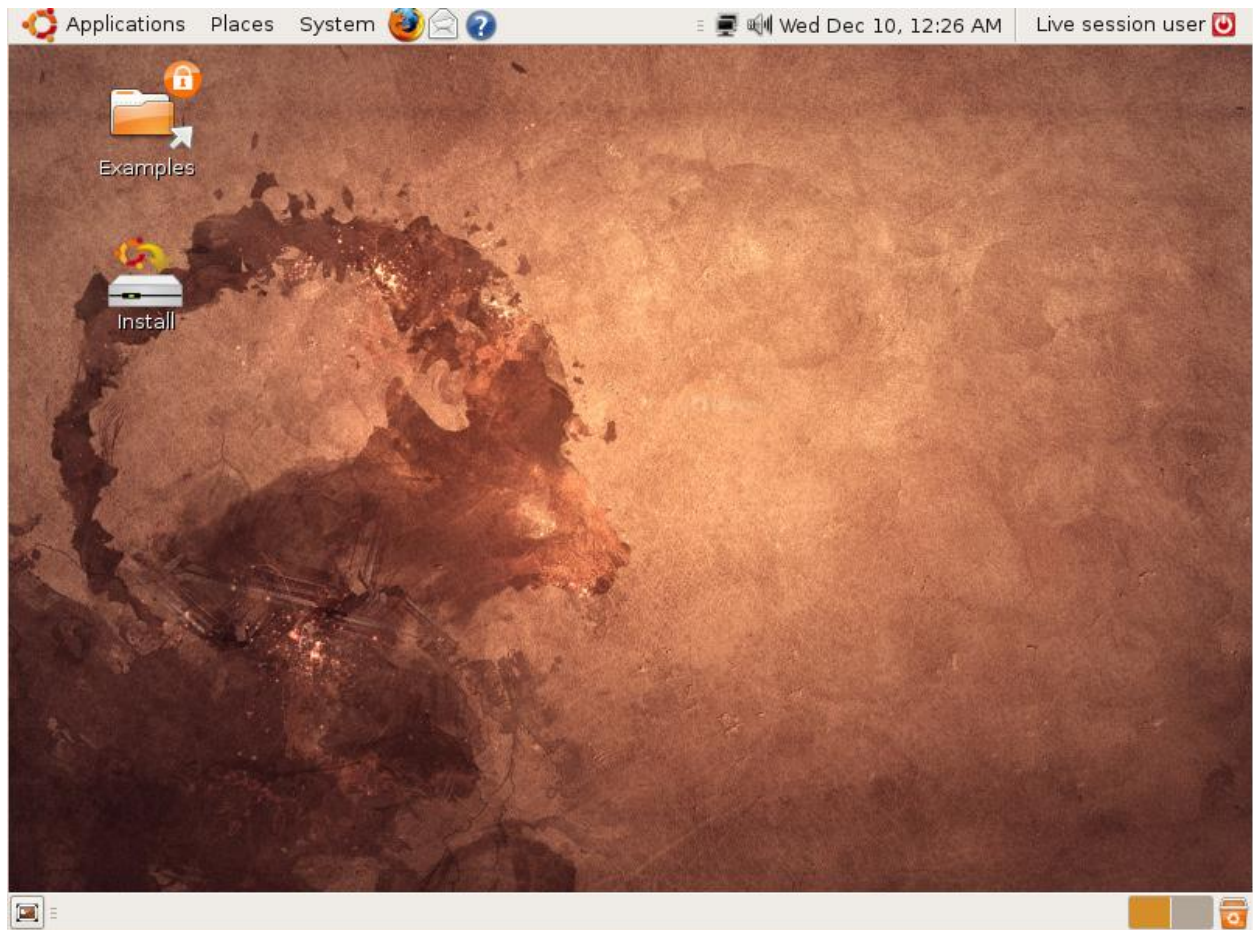
Once the LiveCD has finished booting you will be at the log in screen.



Since this is a LiveCD you will be automatically logged into the desktop. So don't enter anything into the Username area.

Step Four

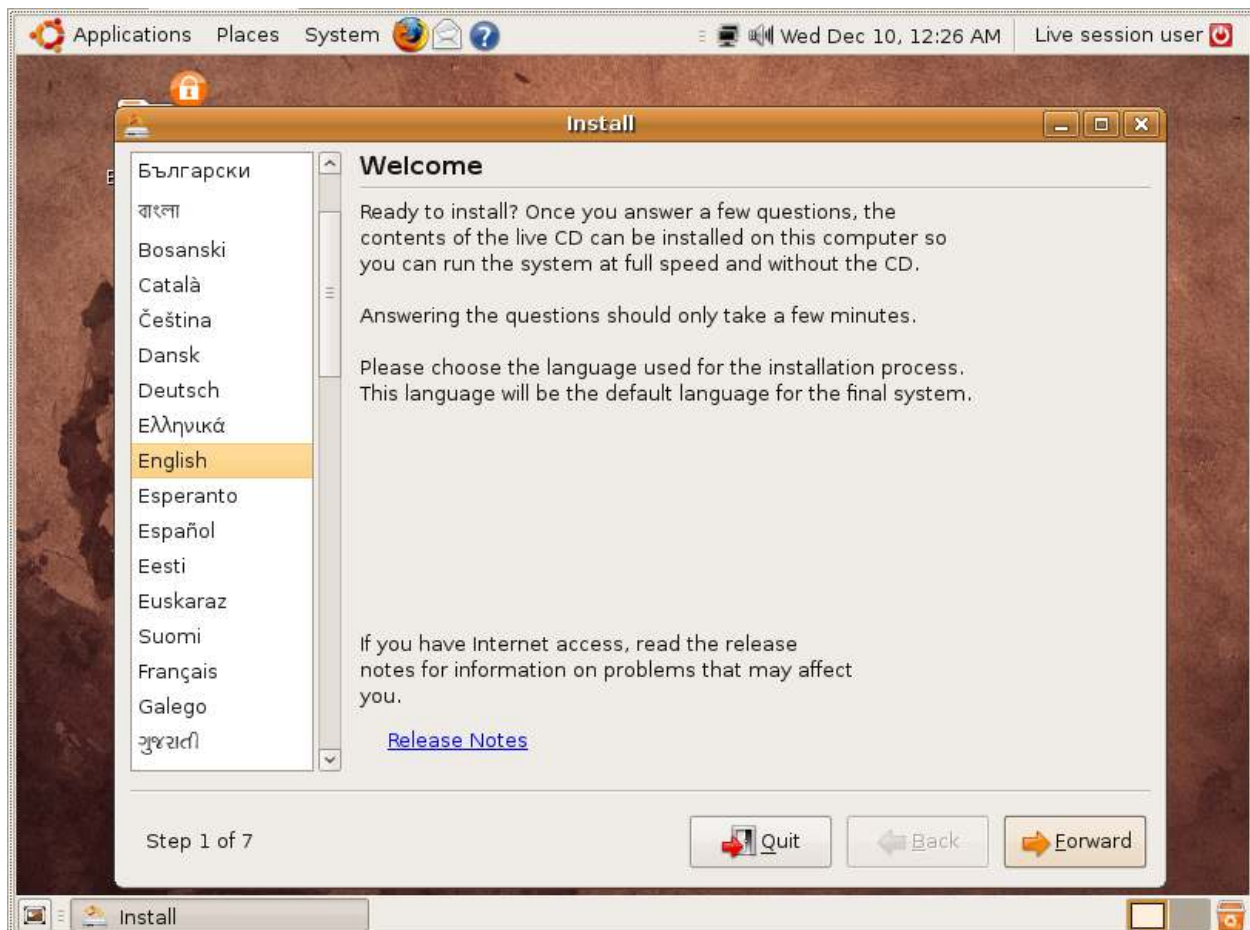
It's time to begin the actual installation. At this point you can either play around with the operating system or you can jump straight to the installation. Let's install, shall we?



As you can see above the GNOME desktop is up and running. But since we are installing we are going to go straight to the Install icon. Double click on that icon to begin the install process.

Step Five

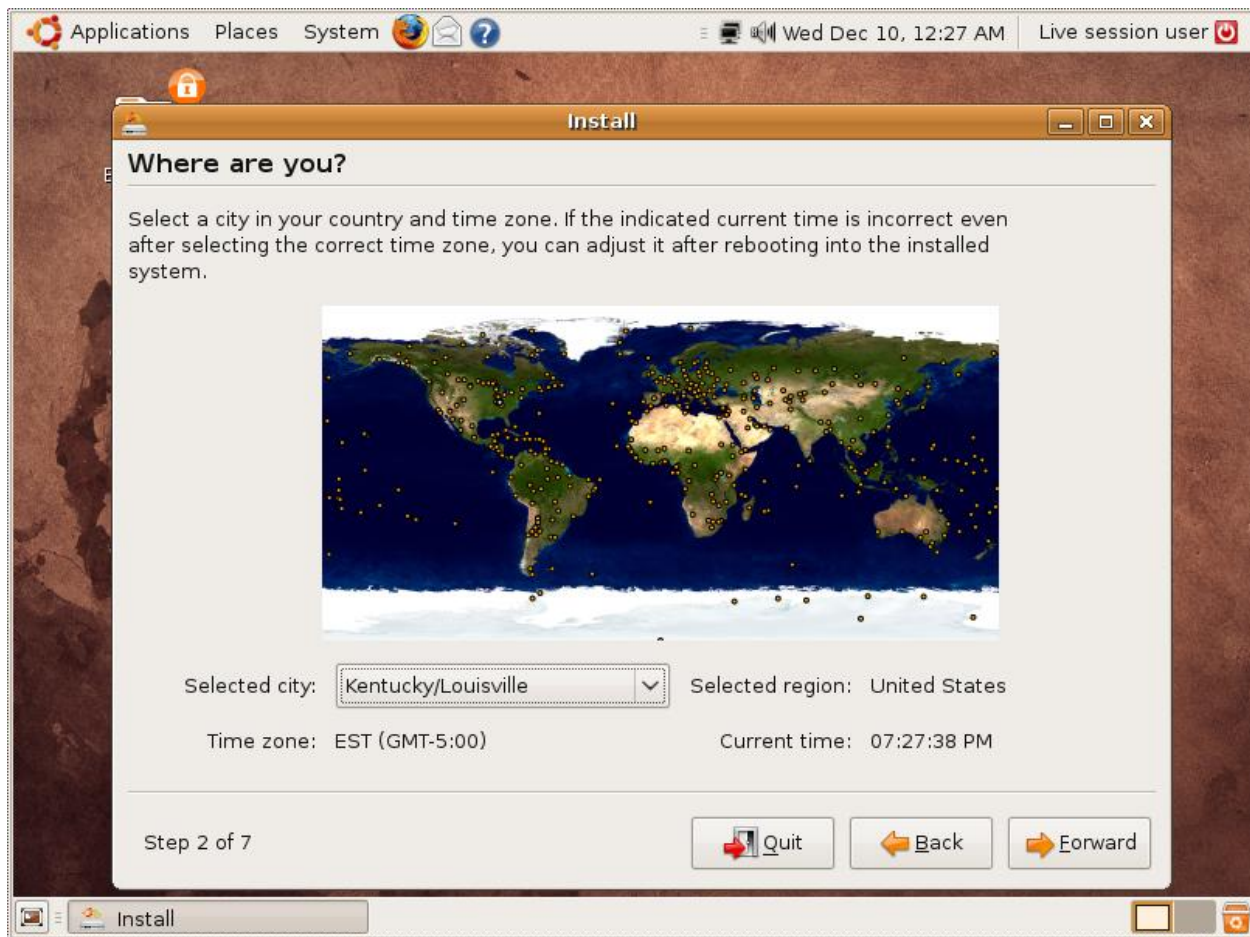
The first step is to select the language of your distribution. Select the correct language and press Forward.



Once you have selected the correct language, select Forward to move on.

Step Six

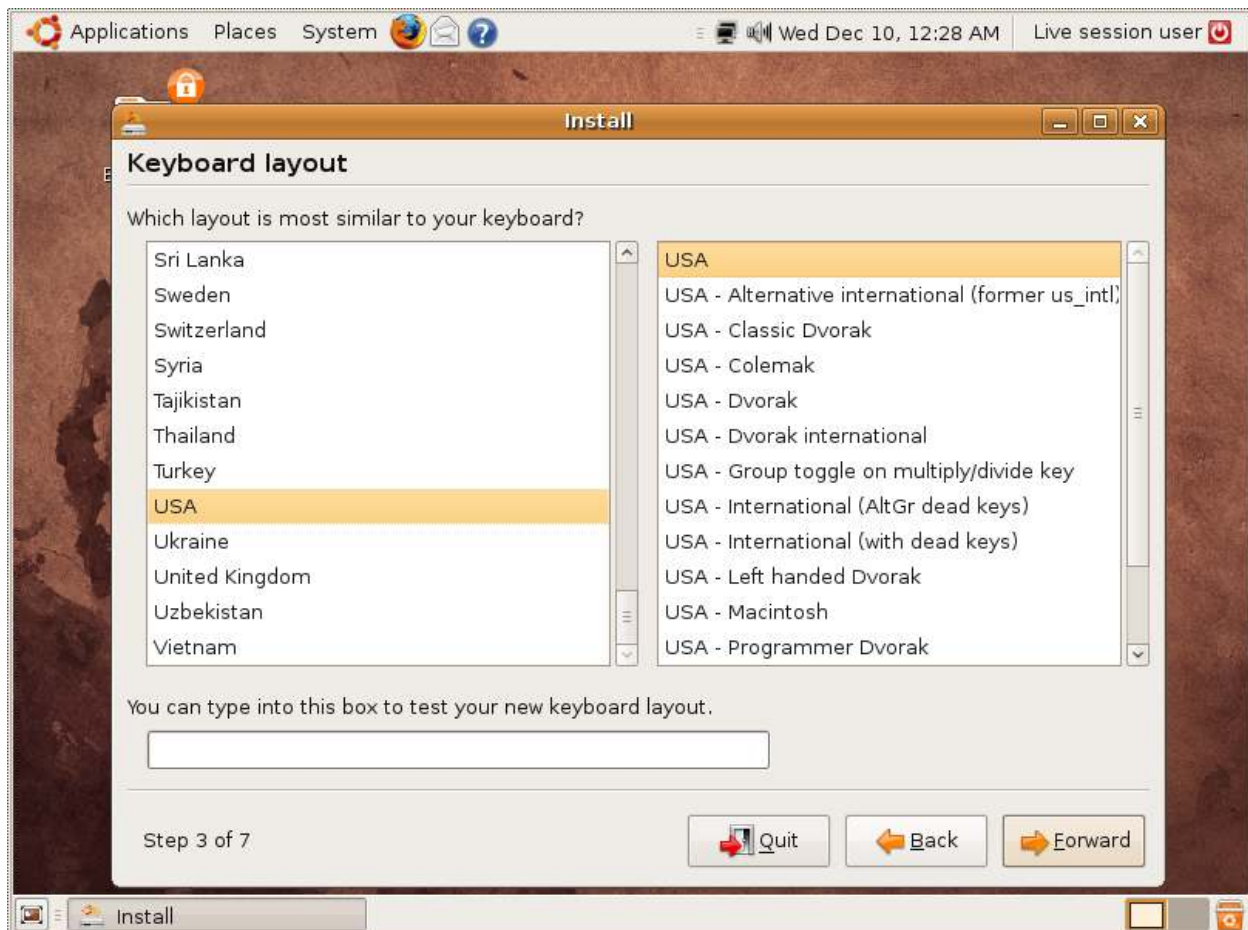
Now it is time to select your time zone.



If your exact location is not available, just choose the nearest region that shares the same time zone and click Forward.

Step Seven

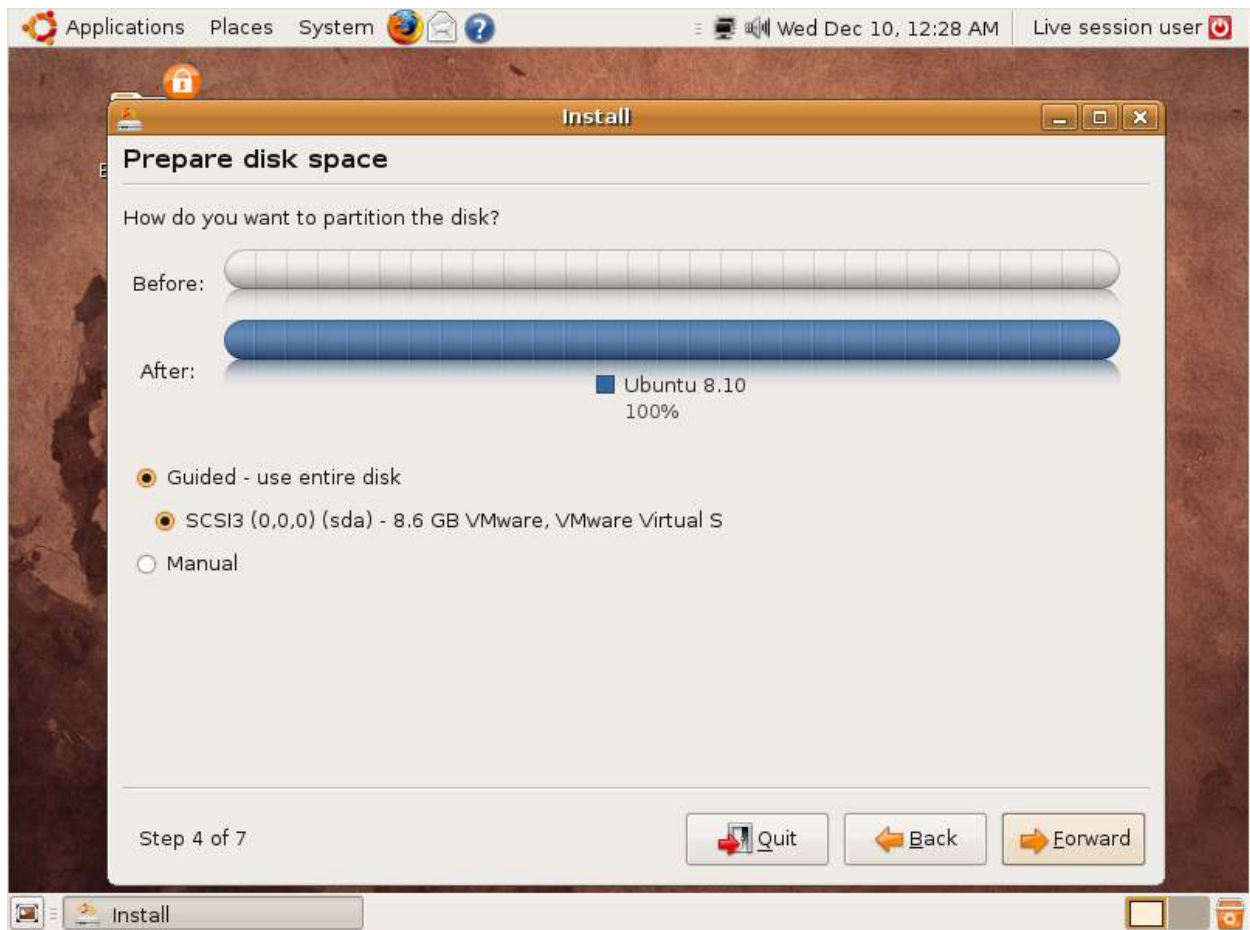
This step requires you to select your keyboard layout. You can test the selected keyboard by typing sample text in the text area.



Once you are happy with your keyboard layout click Forward to move on.

Step Eight

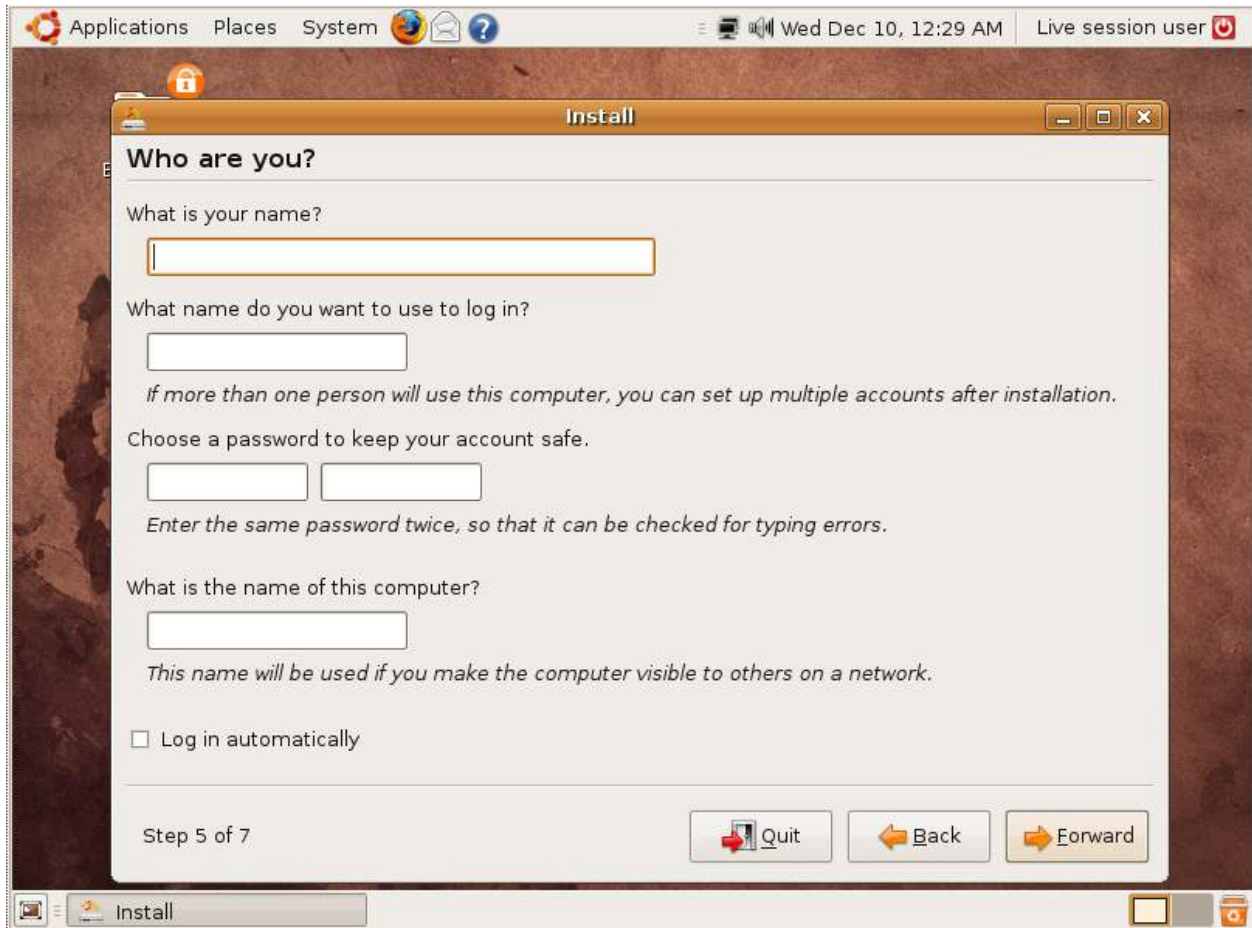
The next step requires you to select a partition setup. If you're unsure the best bet is to select a guided setup. If this installation is going to be the only operating system you can have the partition manager use the entire disk.



Only choose the Manual option if you know what you are doing. Once you have made your selection press Forward

Step Nine

Now it is time to create a user. This user will be your standard user but will also have sudo rights. So choose a strong password. You can set up more users after the installation is complete.



If you do not want to have to deal with logging in select the “Log in automatically” option. Once you have finished click Forward.

Step Ten

You have finished entering information. Now it is time to click the Install button to continue.



Click Install and your system will begin installing. You can either sit back and watch the progress bar go by or get a bite to eat. Believe it or not the installation doesn't take long. Depending upon your machine the install can go as quickly as 10-15 minutes.

Final Step

Once the installer has finished it will prompt you to either continue working with the LiveCD or to reboot your system to start working with your freshly installed Linux operating system.



And your done. As soon as your machine reboots (make sure you remove the CD from the CD drive when prompted) you will be using your brand new Linux system.

The modern Linux operating system, as you can see, is one of the easiest to install operating systems available. I hope this walk through has made the choice to try Linux that much easier.

[Choosing the right distribution will ease your migration](#)

For those of you considering a migration from Windows to Linux I have a very simple piece of advice that will make the migration much easier. That advice:

Choose the right distribution.

Let me begin at the beginning, or at least the best starting point. The Linux operating system is built with a number pieces. The most underlying piece is the kernel - that is the heart of Linux. On top of the kernel rests a ton of libraries, drivers, and system applications. Overlaying that is user-space console applications. The next layer is the X Windows system. X Windows is the piece that gives Linux a graphical environment. The final layer is the desktop.

Linux is separated into distributions. A distribution is, for all intents and purposes, a “brand” of Linux. There are many distributions: Ubuntu, Fedora, Red Hat, Mandriva, PC/OS, gOS, SuSE, etc (hundreds of them in fact). Each distribution is based on a different base. There are five main bases: Debian, Slackware, BSD, RPM, and Gentoo. Each “base” is formed around a package-manager (a package manager is a system for installing, removing, and managing the software that is on the system.)

How a distribution puts together its version of Linux defines their audience. Some distributions are better suited for new users. These are:

- Ubuntu
- PCLinuxOS
- Mandriva
- Linspire

Some distributions are better suited for mid-level experience users:

- SuSE
- gOS
- Fedora
- Red Hat

And some distributions are better suited for advanced users:

- FreeBSD
- Debian
- Gentoo

NOTE: As gHacks user MrBuddha has already pointed out, BSD is not actually a Linux distribution but a variant of the BSD operating system. I do generally lump BSD in with Linux because they are both UNIX-derived operating systems and share a number of similarities. The lumping in of BSD is two-fold: 1) simplicity and 2) applications created for Linux generally can be used on BSD.

If you are a new user your choice of distribution should be limited to the top four listed. That will make your learning curve far more shallow. Distributions such as Ubuntu have done everything they can to make using Linux simple. From the installation to the desktop, you will find these distributions to be the easiest operating systems you have ever used.

Choosing the right distribution will ease your migration

Posted by [jack](#) in [Advice](#), [Linux](#), [Open Source](#), [Windows](#), [ghacks](#) | [Edit](#) Tags: [GNOME](#), [KDE](#), [Linspire](#), [Linux](#), [linux distributions](#), [LiveCD](#), [ubuntu](#), [Windows to Linux](#)

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- [Mandriva](#)
- [Linspire](#)

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What is the biggest difference between Linux and Windows?

- Cost
- Security
- Flexibility
- Support
- Reliability
- Other

[View Results](#)

 Loading ...

But what makes them easier?

Let's take a look at the Linspire distribution. The Linspire mission has always been to make Linux the easiest operating system available. And many of the easier-to-use distributions are following suit. Linspire and Ubuntu can be found on many pre-installed computers. One of the aspects that makes these distributions so much easier is package management. Each of the easiest distributions have a centralized location for software installation. If you want to install something, you fire up Synaptic (or whatever opens when you click Add/Remove Software) and search for a package to install. It's simple. But don't think, for a second, that you'll have your operating system up and running and have to install a bunch of software. A Linux operating system usually comes complete with everything you need. You could effectively install the operating system and never have to install another piece of software again.

Another piece of the puzzle that makes one distribution easier than another is choice of desktop. There are some Linux desktops that make the migration from Windows a no-brainer. Both KDE and GNOME can be made to mimic the look and feel of Windows so well some users wouldn't know they are using Linux.

Freedom of Choice

Ultimately the choice is yours. Do you select a distribution that targets new users or do you go for a more advanced Linux? Don't fret. Most modern Linux distributions offer Live versions of their operating systems. This means you can boot from the LiveCD and run the operating system without making any change to your computer. This allows you to test-drive Linux. Do this with the easiest distributions and I bet you'll find one that meets your needs.

[Configuring gtkpod for Music Playback](#)

In my recent article I illustrated how to connect your iPod to the Linux application gtkpod. Gtkpod is fairly straightforward, but there can be issues. One of the issues is playback of files. And what good is a multimedia application if it can not play back the files it manages? Configuring gtkpod is actually quite simple to configure for playback. Of course playback will depend upon which application is installed. You can configure gtkpod playback in two ways: By opening another graphical application or by employing a command-line tool. I am going to show you how to configure both.

The first thing you must do is make sure you have the applications installed on your machine. One reader pointed out that gtkpod had trouble with XMMS (which, I admit, is an old-school application). With modern distributions XMMS is not typically installed, yet gtkpod still defaults to XMMS being the default player on some distributions (Ubuntu and Mandriva for example). We'll fix that.

Let's first show how to get gtkpod running with a command line player. We'll use mpg123 because it's one of the more universal players. You can install mpg123 either from command line or from the Add/Remove Software utility. From the command line the installation would be something like:

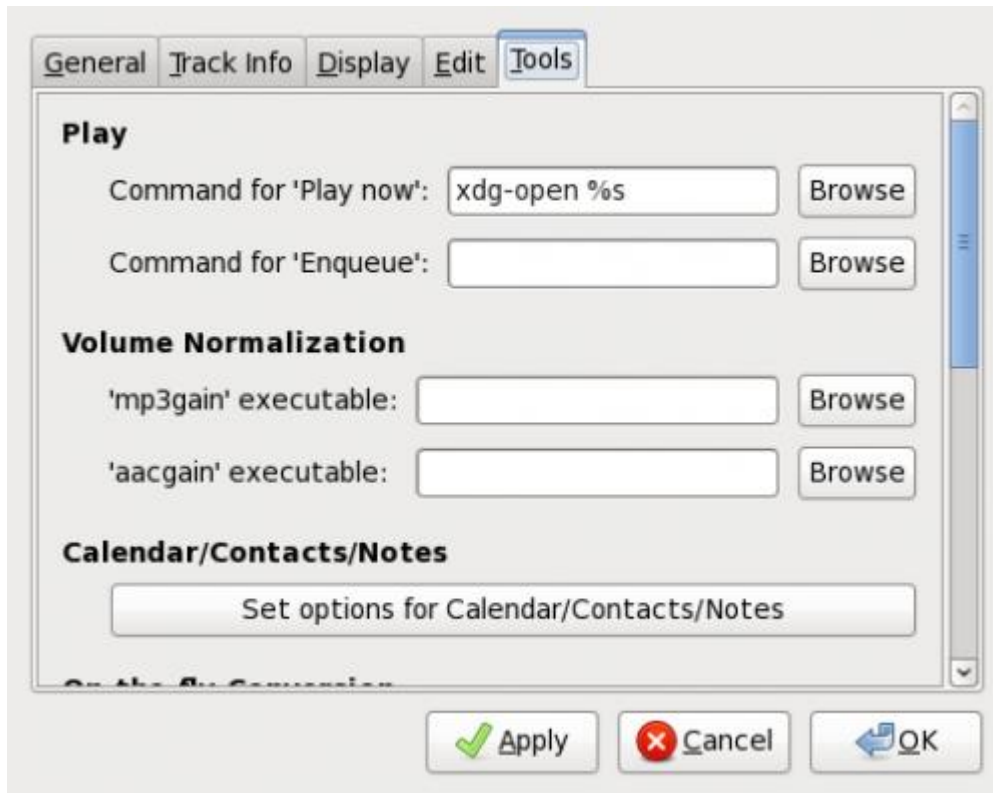
```
apt-get install mpg123
```

or

```
yum install mpg123
```

Once mpg123 is installed you can then fire up gtkpod for configuration.

From the Edit menu select Preferences to open up the configuration window.



There are two lines to configure:

Command for 'Play now'

Command for 'Enqueue'

Both of these can be configured with the command. As you can see, in the figure above, my Fedora 10 default installation of gtkpod defaults to using XDG. This is an outstanding GUI application for use with gtkpod. But let's make a simple change. Edit that line to read:

```
mpg123 %s
```

and click OK. Now go back to gtkpod, right click on a song and select "Play Now". The selected song should start playing. Now here's one issue with using a command line tool for playback: In order to stop playback you have to open a terminal window and issue the killall command. In our example you would issue the command `killall -9 mpg123`. Or you could wait for the song to complete. If you queue a number of songs for playback then you will definitely have to issue the killall command to stop playback.

The same configuration holds true for an external GUI application. The good news about using a GUI application is that you can control the playback of the file much better.

Should you want to use XMMS for the playback of files you will most likely either have to delete the current XMMS (if you do not have mp3 support rolled into your current XMMS installation.) Say you are using Fedora. To change XMMS for mp3 support issue the following commands (as root):

```
rpm -e xmms (Only if XMMS is already installed)
```

```
yum install xmms-mp3
```

Now if you use XMMS as your playback application you would have *xmms %s* for your playback configuration.

Final Thoughts

Yes it's true, it would be nice if gtkpod had a built in player. However, having a reliable application for syncing an overly-flaky, yet overwhelmingly popular music device far outweighs having to configure the application to use a working playback system.

[Convert .mp3 files to .wav files in Linux](#)

With the popularity of mp3 players, and the frustrations of using DRM-crippled music, it is always nice to be able to rip your own mp3 files. There are plenty of Linux tools to handle this task. But what about the mp3 collection that you want to burn onto a playable CD? Although there are many CD players that will play mp3 format, not all will. For that you need to have .wav file format on the CD. One tool for this conversion is the command-line mpg123 utility. The mpg123 command can do a lot of things, one of the things it is best at is conversion. In this article I am going to show you how to install mpg123 and then use it to convert mp3 files to wav files.

The first thing to do is to get mpg123 installed. This can be done very quickly via command line. One of the following commands will do the trick (depending upon which distribution you use):

```
apt-get install mpg123
```

```
urpmi mpg123
```

If you are using Fedora Core you will most likely have to stop by rpm.pbone.net, download the correct rpm package and install with the command:

```
rpm -ivh mpg123-RELEASE_NUMBER.rpm
```

Where RELEASE_NUMBER is the actual release number you download.

Once installed you are ready to go.

With the wav files located in a directory change to that directory to run the command. The format of the command will be:

```
mpg123 -w file.wav file.mp3
```

The “-w” argument tells mpg123 that the output will be in the .wav format. The first file name is the output file name which is user configurable. A word of warning, spaces in file names aren’t always the best choice in the Linux operating system. If you want to separate words in a file name you can use “_” character. So creating a .wav of Rush’s Tom Sawyer you would do something like:

```
mpg123 -w Rush_Tom_Sawyer.wav “01 - Tom Sawyer.mp3”
```

Batch Conversion

What about batch conversion? This requires a bit of shell scripting. Create a Music directory (in modern Linux distributions there should be one in ~/) and dump all of your mp3 files into that directory. Next, create a shell script in your favorite text editor. We’ll call that script “batch_conversion”. The contents of the script might look like:

```
#!/usr/bin/perl
my $dir = “~/Music”;
opendir DH, $dir or die “Can’t open $dir: $!”;
$count2=1;
while ($name = readdir DH) {
next unless $name =~ /\.mp3$/;
$wav=“$count2.wav”;
print “$wav\n”;
system “mpg123 -w $wav \”$name\””;
$count2++;
}
```

Once you save the file you have to give it executable permissions with the command `chmod u+x batch_conversion`. To run the command you will issue (from the directory the new file is located) `./batch_conversion`. Once you run the file you will have both the mp3 and the wav files located in the ~/Music directory.

Final Thoughts

Converting mp3 files to wav files for burning audio CDs is a simple process with mpg123. There are gui tools for this job but the command line tools make for much more flexible jobs.

[Connect your iPod to gtkpod](#)

You’re new to Linux. You have managed to figure your way around the desktop and you have become accustomed to the application installation process. Now it’s time to go about day to

day business of using your newfound obsession. Of course one of the first issues you might come across is that of application abundance. With Linux there are sometimes countless applications that can handle the same process. Which one to do you use? If you are like many new users you will find an application that does what you need and then you will stop looking. But with Linux there is always something that might be a little better or suit your taste a bit more. One of those applications is gtkpod. Although gtkpod does not contain many of the advanced features of iTunes it is one of the more reliable iTunes-like applications for Linux. In this article I will show you how to connect your iPod to gtkpod.

First Steps

The first thing you need to do is to plug in your iPod and mount the device. Before you actually plug in the device there are a few tasks to take care of. The first of these tasks is to create a directory where the iPod will be mounted. As the root user issue the command `mkdir /media/mp3`. You can name this directory whatever you want. Once you have the directory created you can plug in your iPod. Now issue the command `dmesg` so we can find out where your iPod was detected. When `dmesg` has completed you will see output like:

```
sd 2:0:0:0: [sdb] 58605120 512-byte hardware sectors (30006 MB)
sd 2:0:0:0: [sdb] Write Protect is off
sd 2:0:0:0: [sdb] Mode Sense: 68 00 00 08
sd 2:0:0:0: [sdb] Assuming drive cache: write through
sd 2:0:0:0: [sdb] 58605120 512-byte hardware sectors (30006 MB)
sd 2:0:0:0: [sdb] Write Protect is off
sd 2:0:0:0: [sdb] Mode Sense: 68 00 00 08
sd 2:0:0:0: [sdb] Assuming drive cache: write through
sdb: sdb1 sdb2
```

As you can see my iPod was listed at `/dev/sdb`. So now we know what entry to add to `/etc/fstab`. As the root user again open up `/etc/fstab` and append the following line:

```
/dev/sdb2 /media/mp3 auto ro,noauto,user 0 0
```

NOTE: The above line will vary depending upon where your iPod was detected and what directory you created for mounting purposes.

With your `fstab` entry in place exit out of the root user and issue the command `mount /media/mp3` (Where `mp3` is the directory you created for mounting purposes).

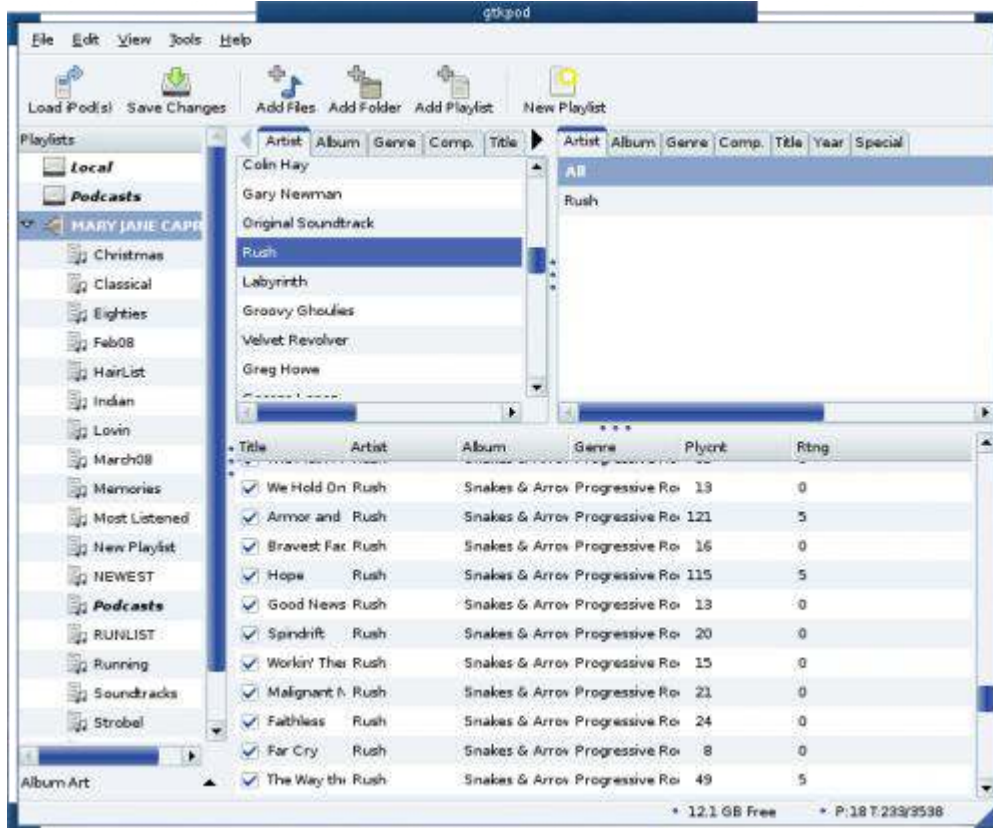
If you issue the command `ls /media/mp3` you should now see the contents of your iPod. And with the iPod mounted `gtkpod` should automatically detect the iPod.

Fire it up!

Now it's time to open up gtkpod. This will most likely be in your Audio/Video or Multimedia menu subdirectory of the Main Menu. If you do not find it you will have to install it. Most distributions do not include gtkpod by default. If you open up the Add/Remove Applications utility you can find it doing a search for "gtkpod".

Once gtkpod is open, so long as your iPod is mounted, it should detect the device and load it.

As you can see gtkpod is pretty much a no-frills means to sync your iPod in



Linux. Using

gtkpod is pretty straightforward: Click to add files or directories, click Save Changes (sync), click to Load your iPod. There is only one issue that you must know about. When you are done with your iPod you need to close gtkpod and then UNMOUNT your iPod! To unmount your iPod go back to the command line and issue the command `umount /media/mp3` Where *mp3* is the actual directory where you have mounted your device. If you do not unmount your device you risk losing your data.

Final Thoughts

Gtkpod is one of the most reliable iPod managing tools in Linux. Sure there are far better multimedia players (such as Banshee or Amarok), but their iPod support can be flakey at best. Give gtkpod a try. If you're looking for a reliable way to sync your iPod in Linux, this might be it.

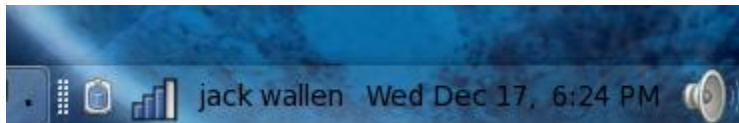
[Connecting to Wireless Networks in GNOME](#)

Connecting to wireless networks in Linux has, for a long time, been a nightmare. Until recently wireless was often a deal breaker in Linux (especially with laptops.) But things have changed. Now more cards than ever are supported as well as more protocols. And with the GNOME Network Manager Applet, connecting to a wireless network couldn't be easier.

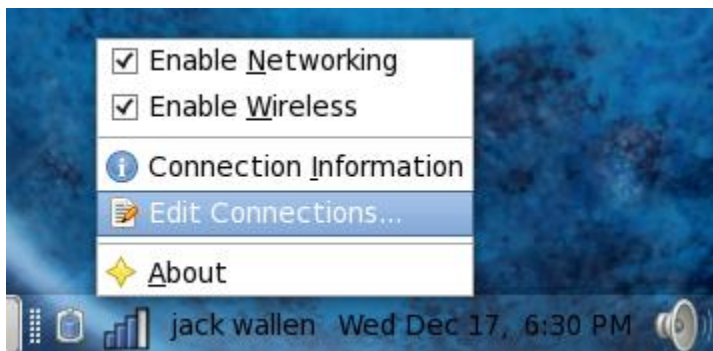
How easy you ask? Let me show you.

Locating the applet

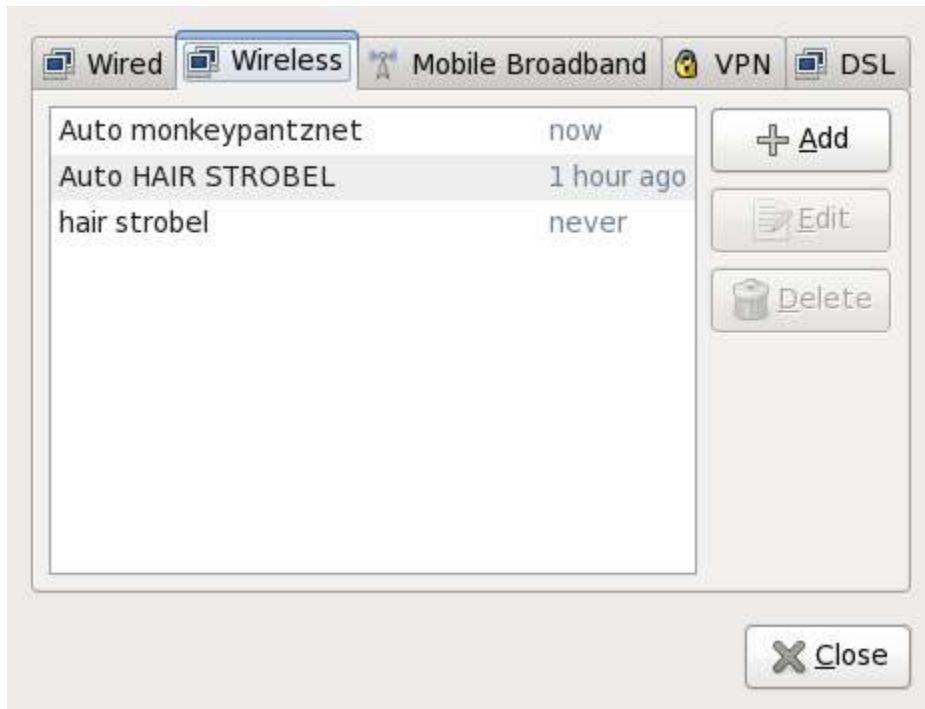
The first thing you need to do is find the applet which will be in your system tray either in the top or the bottom panel on your GNOME desktop.



How many bars do you have? As you can see I am already connected to a network. But what if I am not? Simple if you right click the applet a menu will appear which contains the "Edit Connections" entry.



Select the Edit Connections entry to open the Network Connections menu.



Click on the Add button to create a new network. This will bring up a simple window where you will enter basic wireless information.

Connection name:

Connect automatically

Wireless | Wireless Security | IPv4 Settings

SSID:

Mode:

BSSID:

MAC address:

MTU: bytes

Available to all users

The first bit of information you should enter is the network SSID (the name of the network). Once you have that done you can click over to the Wireless Security tab, select the type of security (WEP, LEAP, WPA, etc), enter the Password, and click Apply.

Once you have created the network you can select the network by left clicking the applet to reveal the network listing.



Of course the system will scan the surrounding networks and any network found will be listed in the Wireless Network listing.

If you select an already discovered network you will be prompted to enter the networks password



Final Thoughts

Connecting to a wireless network has become as simple as it is in any operating system. With the GNOME, as long as your card is supported, you should have your wireless connected in no time.

[Fundamental Differences Between Linux and Windows](#)

Anyone who has pondered the idea of migrating from Windows to Linux knows there are differences between the two operating systems. But just what are those differences? Many people considering this migration might be more apt to make the jump if they know just what the differences are. So I thought it would be a good idea, in the spirit of helping users make the leap, to outline some of the fundamental differences between Linux and Windows.

Cost

In the current state of the economy, cost is a factor that will drive more and more people away from costly solutions to free solutions. That is one area that Linux can not be denied. It is free. Linux has been free since its inception. Why is it free? Because it is created by a vast community of developers who do not work for a single company. Linux is not a company. Red Hat is a company and they package a distribution of Linux that has a pricetag, but they are not Linux.

The vast majority of the software created for Linux is also free. But does this lack of price tag make Linux (and other open source software) of any less quality? No. In some cases open source

software is better than its proprietary counterpart. Back in the late '90s I did a cost comparison of a full Linux installation (at the time it was Red Hat) vs Windows. To get a Windows-based system running with equivalent software that came with the Red Hat installation would cost the user over \$4,000 USD.

Freedom

I am not talking about freedom as it is applied to the open source metaphor. I am talking about freedom from how a single company thinks your computer should work. With Windows you are locked in to how Microsoft feels the operating system should work. Microsoft thinks a taskbar, a start menu, icons, and a system tray create the best desktop. For some that may be. But for many users it is not the best choice. Myself? I prefer a minimalist desktop without the standard desktop pieces. If I were using Microsoft I would be out of luck (unless I employ a third party, proprietary solution). With Linux I can make my computer do and act exactly how I want. I am only limited to my imagination and my time.

File system Hierarchy

First and foremost Linux uses a single hierarchical directory system. Everything in Linux begins in the root directory which is the "/" and drives will be labeled /dev/sda, /dev/sdb, etc. Windows, on the other hand, uses a multiple hierarchical directory system that depends upon the amount of drives in the system. When Windows boots, each drive will be assigned a letter which serves as a root. So in a Windows system that contains three drives there will be three roots (such as A:, E:, and F:). In a Linux system only one drive will hold the root directory. If other drives are mounted on that same system they will be mounted in /media/. But even if you have multiple drives on a Linux system, you will only have one root directory. The differences certainly do not end there, but for the sake of length, I will move on.

Hardware Support

This is where things can get a little tricky. Because Microsoft is so embedded in the retail market, most hardware is created with Windows in mind. Because of this it is possible to get, with the right drivers, most hardware to work with Windows. With Linux hardware support is dependent upon the developers being able to either hack together a workable solution or get the hardware maker to work with them and hand over the specs. There are only a few instances where hardware simply won't work with Linux. In these cases it is a matter of hardware vendors not releasing specs. But in general you will find out of the box Linux support to be pretty fantastic.

In my case I find modern Linux distributions to be better at detecting hardware than Windows. But if you are one of the unlucky few that has hardware created by a less-than-cooperative vendor, you might have trouble. Google your hardware for Linux support in case you are unsure.

Security

This is another area that will be hotly debated until the end of the operating system as we know it. Whether driven by market share, hatred, or vulnerability Windows simply has far more weaknesses than Linux. One of the primary differences is the root access metaphor. In order to do any serious damage to the Linux system one has to have access to the root user, which means the root password. Without that password, you're not getting very far. This does not mean there are not exploits to, say, Sendmail or Apache or MySQL. Another major difference is when a vulnerability or a bug is found the development community of the affected software is typically very fast at plugging the hole. Microsoft has a proven track record of taking far too long to patch similar holes.

Final Thoughts

There are plenty of other differences between Microsoft and Linux. Can you think of any? If you are a new user, what differences have you found to be most difficult to get beyond?

[Get To Know Linux: Desktop Environment vs. Window Manager](#)

Ever since the inception of GNOME and KDE there has been confusion among new Linux users which is which and which is best to use. The former question is fairly simple to answer. The latter question, however, is a bit more complex due to user-specific needs/wants.

With that in mind let us begin by illustrating the differences between a desktop environment and a window manager. We'll begin by showing how the Linux graphical desktop is layered.

As you can see, in the image below, there are basically three layers that can be included in the Linux desktop:

- **X Windows** - This is the foundation that allows for graphic elements to be drawn on the display. X Windows builds the primitive framework that allows moving of windows, interactions with keyboard and mouse, and draws windows. This is required for any graphical desktop.
- **Window Manager**: The Window Manager is the piece of the puzzle that controls the placement and appearance of windows. Window Managers include: Enlightenment, Afterstep, FVWM, Fluxbox, IceWM, etc. Requires X Windows but not a desktop environment.
- **Desktop Environment**: This is where it begins to get a little fuzzy for some. A Desktop Environment includes a Window Manager but builds upon it. The Desktop Environment typically is a far more fully integrated system than a Window Manager. Requires both X Windows and a Window Manager.

A Desktop Environment generally includes a suite of applications that are tightly integrated so that all applications are aware of one another. A Desktop Manager will also include some form of panel that includes a system tray where small widgets can be placed for quick action or information.

Layering of the Linux graphical desktop

Desktop Environment

Window Manager

X Windows

Much of the confusion starts to peek out when you examine such Window Managers as E17 (Enlightenment 17).

The most recent iteration of Enlightenment includes many of the elements usually found only Desktop Environments even though Enlightenment is still considered a Window Manager. To this point I generally refer to such desktops as Desktop Managers.

There are two main Desktop Environments: GNOME and KDE. If you are curious as to which is right for you, here is some advice. The latest default GNOME will make users of OS X feel right at home, KDE 3.x will make Windows XP users feel at home, and KDE 4.x will make Windows Vista users feel at home.

As to which Window Manager is best suited for which user? Since there are so many Window Managers I will highlight my favorites.

Enlightenment: You want plenty of eye candy but not something as resource-intensive as KDE or GNOME.

Fluxbox: You want minimal and fast.

Afterstep: You want something old-school to give you hours of tinkering fun.

Xfce: You want a Windows-like interface without the bloatware of GNOME or KDE.

Compiz-Fusion: This is a full-blown 3 dimensional window manager rife with plugs that do just about everything. If you want something to seriously impress your friends, this is where you want to look.

One of the most wonderful things about the Linux desktop is that it is only limited to your imagination. You can make the Linux desktop look and feel exactly how you want it. You can go from complete minimalism to the full-blown 3D goodness of Compiz-Fusion. I will give you one warning: Playing with the Linux desktop might be as much of a time-suck as World of Warcraft.

[Get to Know Linux: File System Hierarchy](#)

The Linux file system hierarchy is much different than that of Windows. So much so that it becomes a show stopper for many new users. I hope to clear up a lot of the confusion here and now at gHacks. So, without further adieu, I give you the Linux file system hierarchy.

/ - This is the base, or root, of the file system. Everything in the Linux system is housed in this directory.

/bin - This directory contains a number of essential commands that are available to unprivileged users (such as cat, chmod, chown, etc). The */bin* directory also houses the shells (such as bash).

/boot - This directory contains everything necessary for the boot process. Without the */boot* directory, your machine would not be able to boot up.

/dev - This directory contains all of the special and device files. With Linux all devices and drives have a name. Hard drives tend to be labeled as hda, hdb, hdc. Special devices such as external usb devices can be labeled as sda, sdb, sdc. If you look in the */dev* directory you will see quite a few files that can be associated with devices. Most of the devices found here are either block or character devices. Block devices hold data (such as a hard drive) and character devices transmit data (such as a mouse).

/etc - This is a very special directory that contains numerous configuration files and directories. This directory will contain the X configurations, Apache, Samba, the init system, etc. The */etc* directory also houses the sources for package management systems like apt and yum. One of the most important subdirectories in */etc* is the */etc/init.d* (or in Red Hat based systems, */etc/rc.d/init.d*). This subdirectory contains all of the initialization scripts for services such as networking, samba, apache, cron, hal, etc.

/home - This is where all user data is housed. Each user on the system will have their own subdirectory within */home*. All user data and user-specific configuration files are saved here.

/lib - This is where all kernel modules needed for system boot libraries that are required by root system commands (commands found in */bin* and */sbin*.)

/lost+found - If your system crashes or is shut down improperly any lost data will be stored here. During a recovery boot the fsck application will attempt to recover corrupt files found here.

/media - This is where all external media (or extra internal drives) is mounted. If you make or edit entries in the */etc/fstab* file you will point devices (such as */dev/sda* to directories withing */media*.)

/mnt - This is another directory where external (and internal) drives and devices are mounted. This is a holdover to older school thought. Most modern distributions are moving to the */media* directory.

/opt - This is a directory that can be used for installing applications that are outside of the default installation. When you install applications here they can be used system wide by all users. Only the root user can install applications here.

/proc - This is a special directory that is actually a virtual filesystem. The */proc* directory acts as a process information center for the kernel.

/root - This is the root users home directory.

/sbin - This is where all system maintenance/administration executable files are stored. These commands differ from those in */usr/sbin* in that they are system commands used for critical system administration and maintenance whereas */usr/sbin* are non-critical tasks such as user administration, network administration, etc.

/usr - This is one of the largest directories on your system as it contains all user-executable binaries as well as the libraries, documentation, and header files for these executables. One of the most important subdirectories is */usr/bin* where all user application executables are stored.

/var - This directory contains all variable data such as log files. On a server environment the document root directory of most servers will be found here (*/var/www* and */var/ftp* are examples.)

/srv - This directory can contain the services (such as *www*) directory in some distributions.

/tmp - This directory, as you would expect, contains temporary files that are stored as needed. Many files you will find here are lock files created by applications. Do not remove anything from this directory as the cron system has a job specifically created for the removal of these files.

And there you have it. A description of each directory in the Linux file system hierarchy.

[Get To Know Linux: Installation](#)

Unless you search it out, you're not likely to come across a PC that comes with Linux pre-installed (exception being the wide-variety of netbooks being sold). Because of this if you want to use Linux you are probably going to have to install the operating system yourself. To hard-core geeks that is not only a non-issue it's typically rainy-day fun. But for the vast majority of people (who are not of the geek persuasion) installing an operating system might as well be brain surgery.

Little do the unwashed masses know that installing Linux is actually a very simple process. In fact, installing Linux is far easier than installing any flavor of Windows. Let me walk you through the typical Linux installation from a LiveCD disk. There might be some minor variation on the order, depending upon which distribution you use.

NOTE: A LiveCD is a version of a Linux distribution that allows you to run the operating system from CD and RAM. No changes are made to your computer unless you start the installation process.

- Insert CD of Linux distribution
- Reboot Computer
- Let the LiveCD boot to the desktop
- Double click the Install icon
- Enter the basic information (location, time zone, keyboard layout, etc)
- Select how to appropriate space on disk (If you are not dual-booting you can select Use Entire Disk)
- Enter user information and password
- Read the installation summary and then, if all is correct, move on with the actual installation.

At this point the installation will be completely automatic. When the installation is complete you will want to reboot your computer (remember, you are running from the LiveCD still). When the reboot is finished you will be at the log in screen. Enter the username/password you supplied during install and your desktop will start up. Congratulations, you have successfully installed Linux!

But will all of my hardware work?

This is often one of the more often asked questions regarding Linux. Generally speaking, the answer is “yes”. There are, of course, some hardware that might have trouble. One area that can give you problems is your video card. Linux does a great job of detecting hardware, and most likely your video card will be detected. There are, unfortunately, cards that simply aren’t supported. For a good list of supported video cards take a look at [this page](#) for a fairly comprehensive listing. The next piece of hardware that can cause problems is wireless networking. I have found most modern distributions are outstanding at finding wireless cards. But just in case you need to know for sure, here is an extensive listing of how wireless cards fare with Linux support.

Most other hardware shouldn’t give you problems. But in case you have one particular piece that doesn’t work “out of the box” you can always try a different distribution. As far as I have discovered Ubuntu, PCLinuxOS, and Mandriva are the best as discovering and automatically configuring hardware.

Final Thoughts

Installing Linux is a piece of cake. Seriously. If you can install a piece of software on a Windows machine, you can install Linux. It's that easy.

[Getting to Know Linux: Installing applications in Ubuntu](#)

You have finally managed to get Ubuntu installed and you are up and running. And even though there are tons of new and exciting pieces of software on your hard drive, you still long for more. Never fear, installing applications in Ubuntu is as simple as it gets.

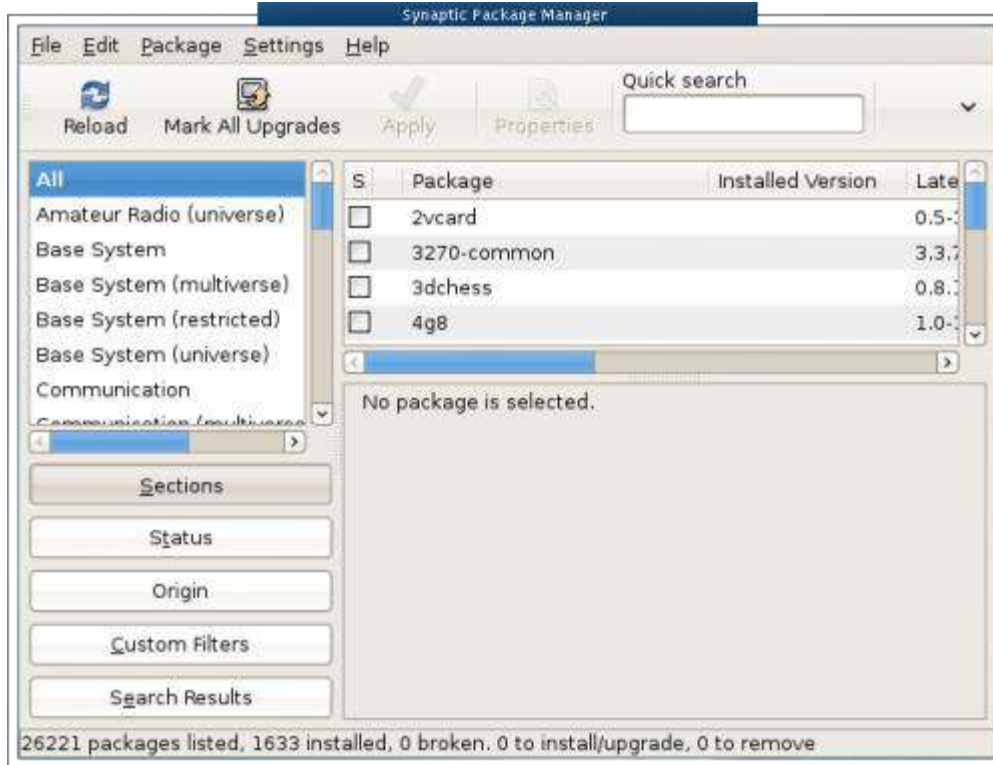
As with everything Linux, there are multiple ways to install applications: Command line, from source, from binary, or GUI front end. What we are going to discuss is the Ubuntu Graphical Package Management front end Synaptic.

Synaptic is an incredibly easy to use front end for the apt package management system. Synaptic is a one-stop-shop for applications. You can think of it as an equivalent to the Apple App Store for the iPhone - only you don't have to pay for anything. You just fire up Synaptic, search for the application you want to install, select the application, and click Apply. You will, of course, have to supply your sudo password in order for the changes to be applied.

Let's take a closer look at how Synaptic works.

Fire it up!

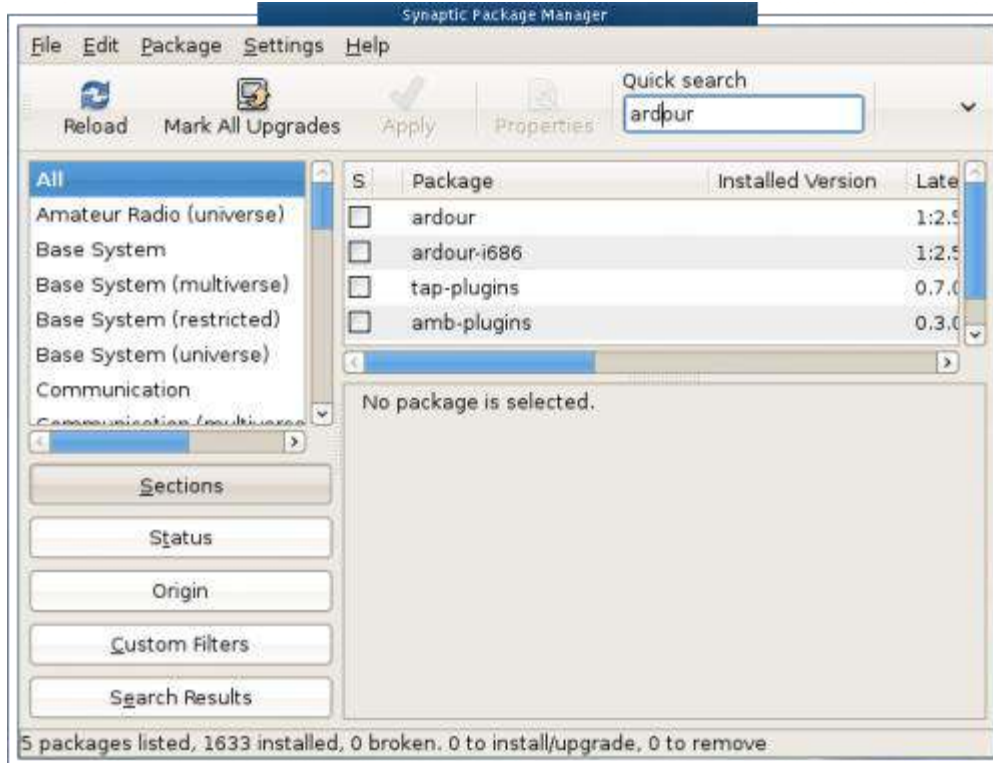
When you first start up Synaptic you will be greeted by the main window.



As you can see there are three panes, a toolbar, a menu list, and organization selection icon list. The panes are fairly simple:

- Left Pane: This is the package listing. From here you can select categories of applications.
- Upper Right Pane: This pane lists the various packages from either categories or search results.
- Lower Left Pane: This pane reveals information about a selected package.

Let's first take a look at how to search and install a resulting application. Say you want to install ardour (an open source digital audio workstation). Enter ardour into the Search text area and hit enter. The results will pop up in the upper right pane.



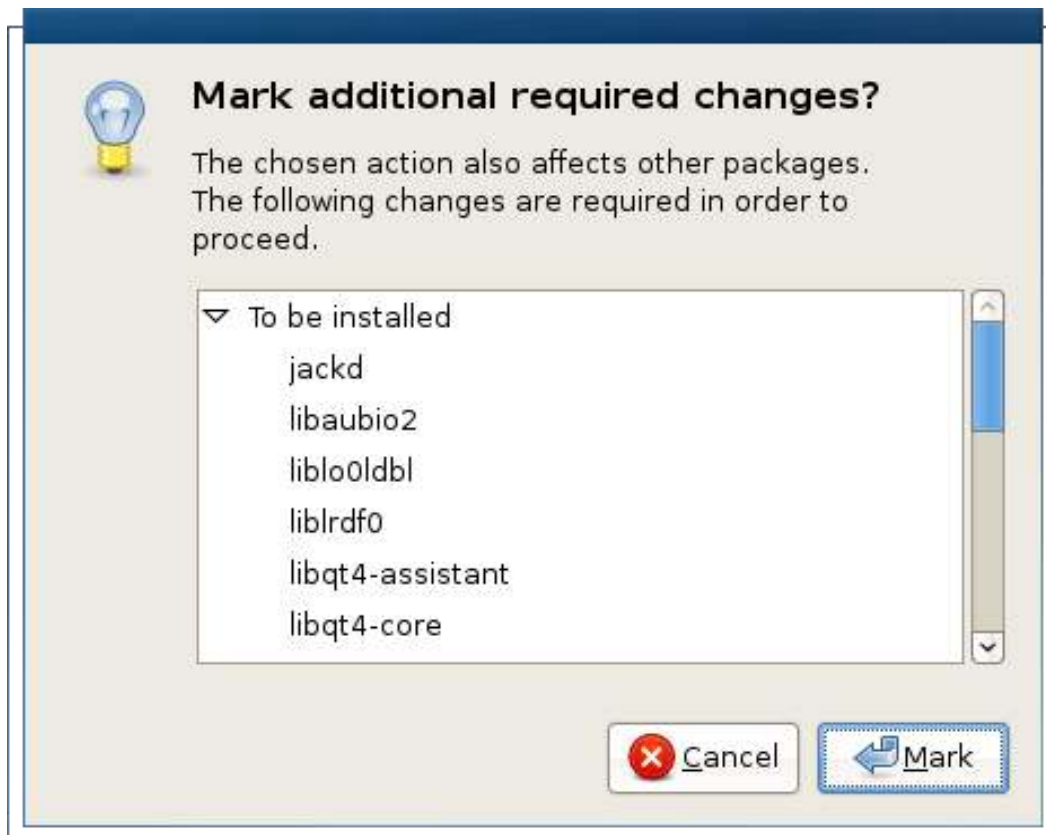
As you can see the package you were looking for is right at the top of the list. To install Ardour on your system click the check box and a menu will appear. This menu is the action menu that allows you to select what action to take on a package. If the package is not installed your only option will be to mark the package for installation. You “mark” packages this way so you can go

through and mark multiple packages to install, remove, re-install,

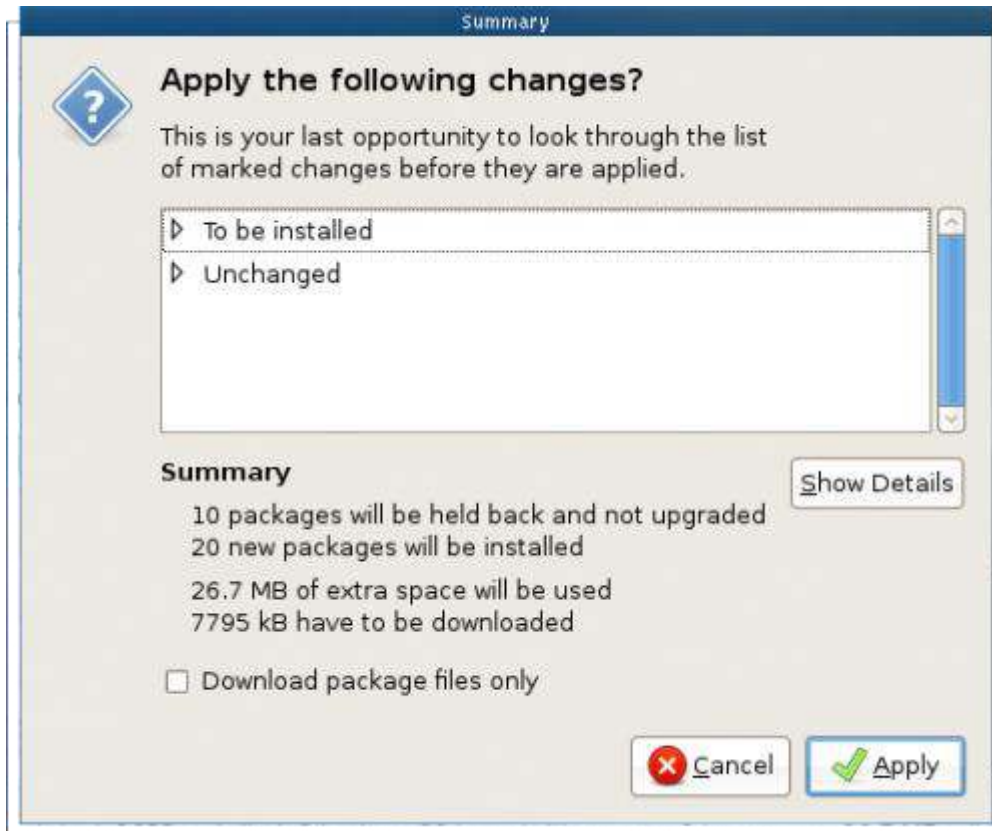


upgrade.

Once you have marked all of the packages you can then click Apply and a new window will appear. This new window informs you what will need to be installed to resolve any dependencies for the requested application.



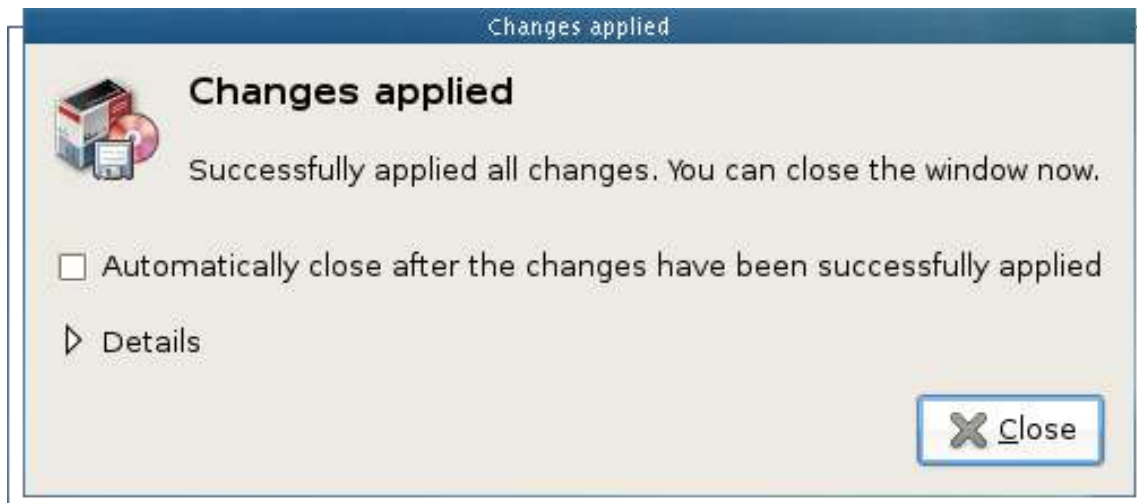
Once you click “Mark” you will be sent back to the main window where you can click “Apply”. After clicking Apply you will have one more window to view which is the Summary Window.



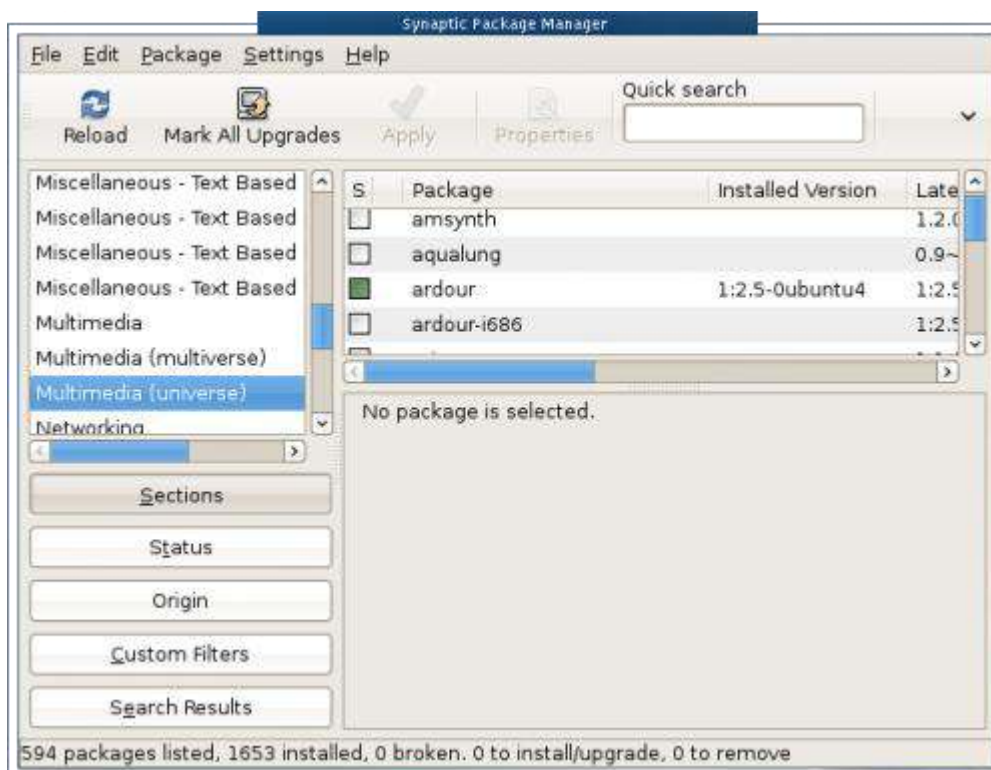
Once you click Apply the progress window will open to show you how things are going.



When the application installation is complete a window will appear informing you the process is finished.



Now let's say you don't know what package you want to install, but you know what category it would fall under. Let's stick with our example above. Since we know Ardour is an audio application we can be pretty sure it will fall under the multimedia category. If you click through the three Multimedia listings in the category pane (left pane) you will find Ardour in the Multimedia(universe) repository.



Once you find the listing you will walk through the same steps as you would have above.

And that's it. Installing an application in Ubuntu is simple. On top of the system being simple, it is a centralized repository where you can find thousands upon thousands of possible applications to install.

[How to dual boot Linux and Windows XP](#)

Unlike Windows Vista, Windows XP does not have a built in tool to resize a partition. Because of this you have to make use of another means. One of my favorite tools for this task is the GParted Live CD. What the GParted Live CD does is boot into a very simple Linux desktop that contains the GParted tool to allow you to resize your XP partition.

Before I get started I want to issue a warning. I have never had a problem using GParted Live CD, but that doesn't mean the system is immune to problems. Problems can happen. To that end make sure you back up your XP data and even create a restore CD. This way, just in case GParted Live wreaks havoc on your data, you can restore it easily.

With that warning out of the way, let's take a look at how GParted Live works. The screen shots you are about to see are from a VMWare installation on a Linux installation. I created a Fat32 partition in order to show you how simple GParted Live is to use.

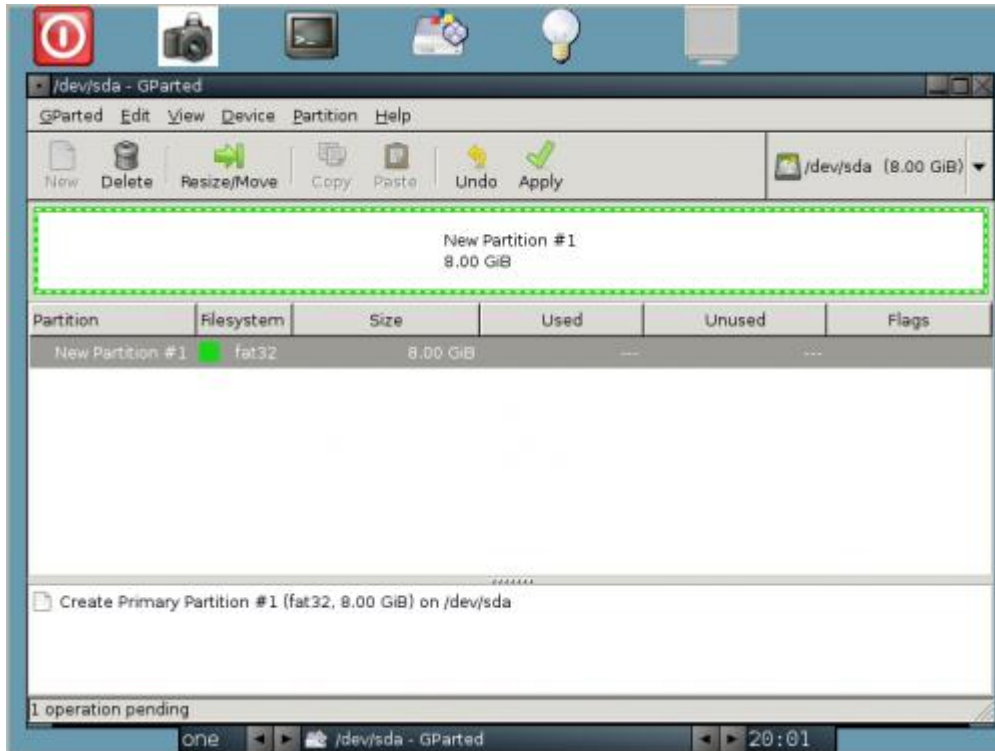
Step One

The first thing you need to do is to defragment your XP drive. This will make sure your data is where it needs to be as well as keeping your data from the end of your drive. Once your drive is fully defragmented you are ready for step two. Of course, before step two you will need to download and burn the iso image onto CD to use.

Step Two

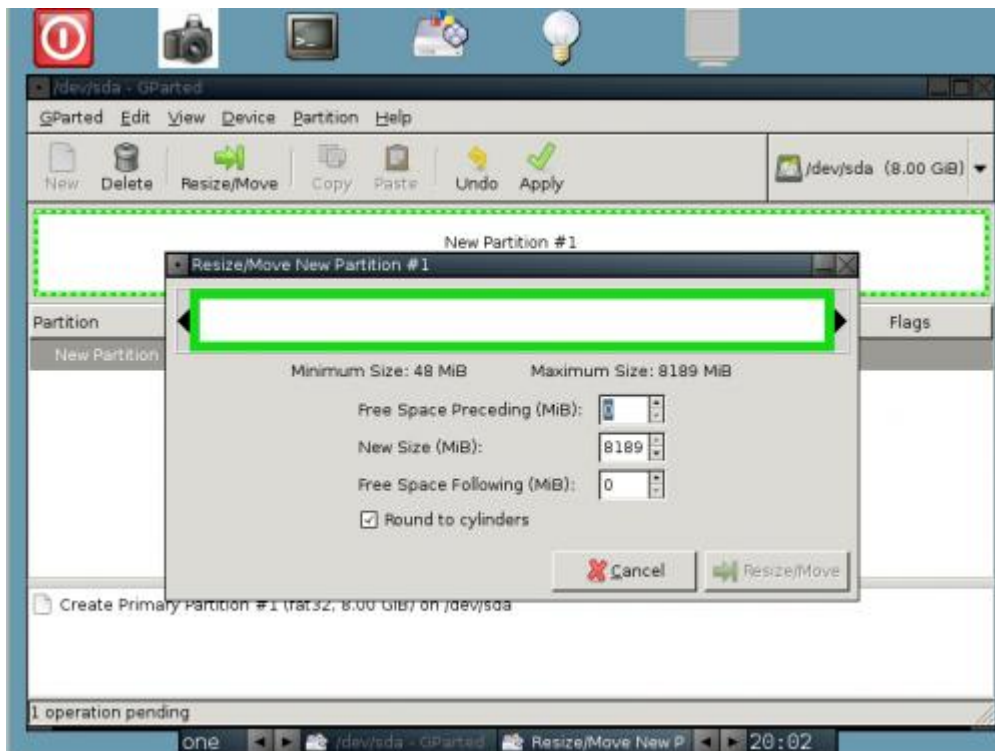
Put the GParted Live CD into your cd drive and reboot your machine. Getting GParted Live is simple to start. You will be asked a few questions about your keyboard, your language, and your graphics. As for the graphics, the default entry should work fine.

Once you are booted into GParted Live you will find yourself in what might be a familiar desktop. GParted Live is based on Fluxbox and is even more minimal than the standard Fluxbox.



Step Three

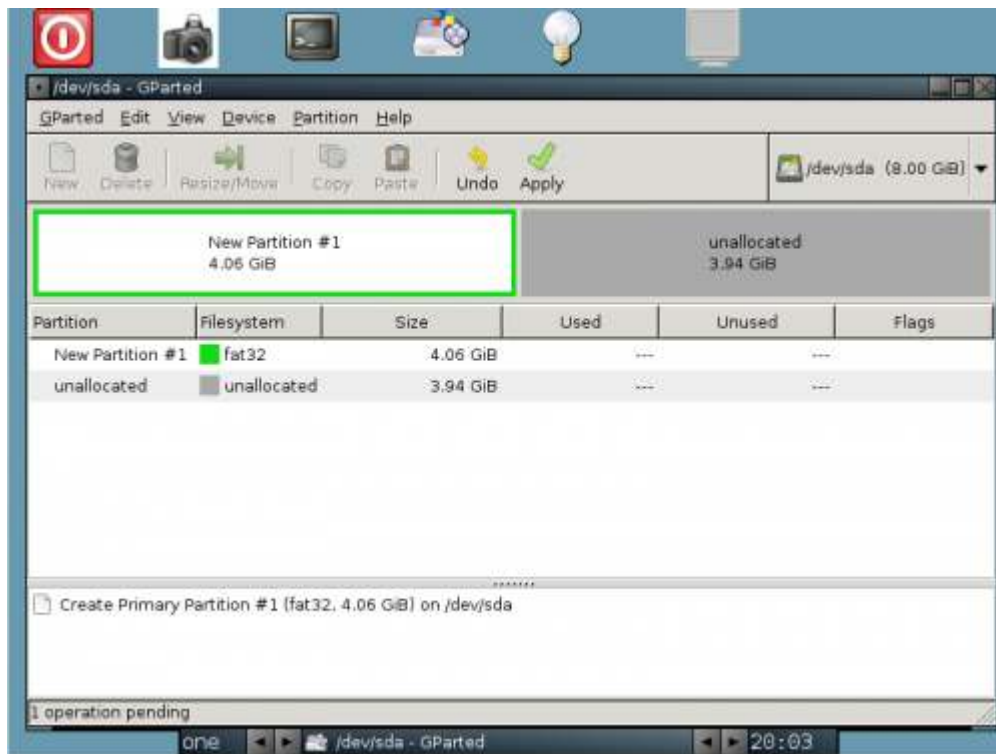
Select the partition you want to resize and click the “Resize/Move” button. When you click that a new window will appear asking how much you want the partition to be resized.



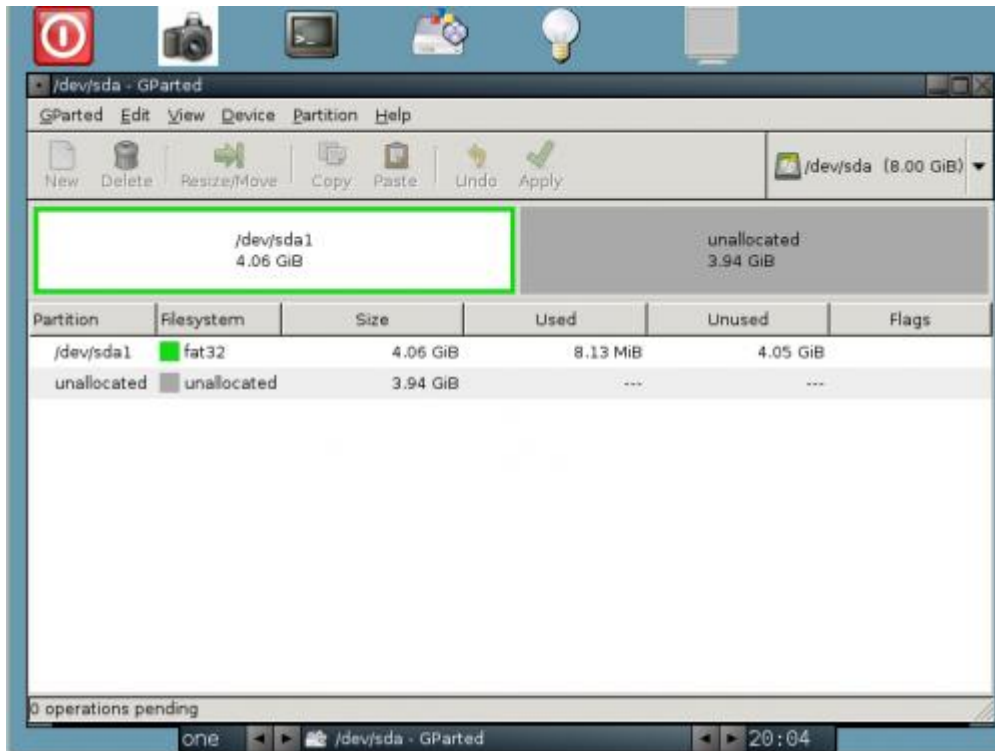
You want to make sure that you are resized the space FOLLOWING the XP partition. Once you have entered the amount you want to resize the space FOLLOWING the partition hit enter and then click the Resize/Move button.

Step Four

The next step is to click the Apply button. Once you click this button the resizing will take place. Depending upon the size you have chosen to free up, this process might take some time.



Once the resizing has taken place you will notice the partition names will change.



That's it. click the Exit button (the red square at the top left) to shutdown GParted Live. Take the GParted Live CD out of the CD drive and let your machine reboot. Make sure XP will boot properly before you continue. Once you are sure XP will boot properly, reboot with your Linux distribution CD in the drive and install Linux.

You can follow my [Illustrated Guide to Installing Ubuntu Linux](#) for a simple Linux install how to. Another article to read, that will get you up to speed on dual booting, is my [How To Dual Boot Windows Vista and Linux](#).

Final Thoughts

Dual booting XP and Linux doesn't have to be difficult. Using GParted Live CD will make this task far simpler than you thought it could be. But do remember, **BACK UP THAT DATA!**

[How to dual boot Windows Vista and Linux](#)

I have had a number of requests for how to documents on dual booting Windows and Vista. Since the process for Vista and XP are different I am going to give them separate articles. I will start with dual booting Vista and Linux. This tutorial will focus on the Windows portion of the process and will only mention the issues surrounding the Linux installation that are necessary to make note of.

Of course I have to make mention to **back up your data!** You never know when something could happen to cause you to lose precious files.

So, without further adieu, let's begin.

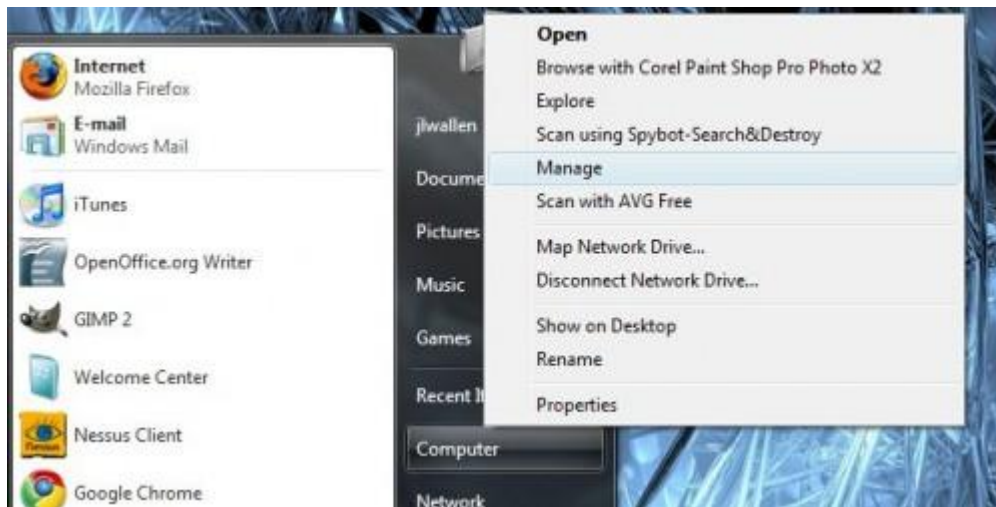
Fundamentals

Before we go into the how to on this it is best to discuss what dual booting is and how it is possible. I will mention that the most important issue with setting up a dual booting machine is that Windows **MUST** be installed first. Because the Windows boot manager is a very single-minded boot manager, it will not recognize any other operating system. To that end, the Linux bootloader must be used.

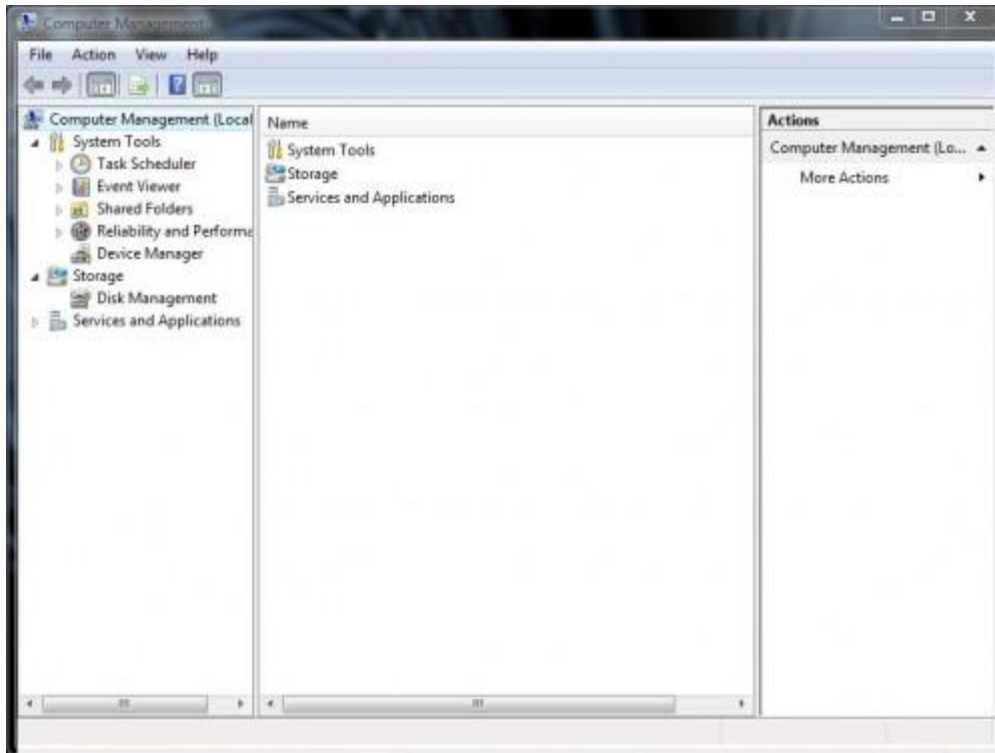
Now dual booting is exactly as you would expect: A single machine with multiple, working operating systems installed. Upon boot of the machine the Linux boot loader (typically Grub) allows you to select which operating system to boot. This set up is very nice for those wanting to make the transition to Linux or want to use Linux but have Windows to play games on.

Getting Vista Ready

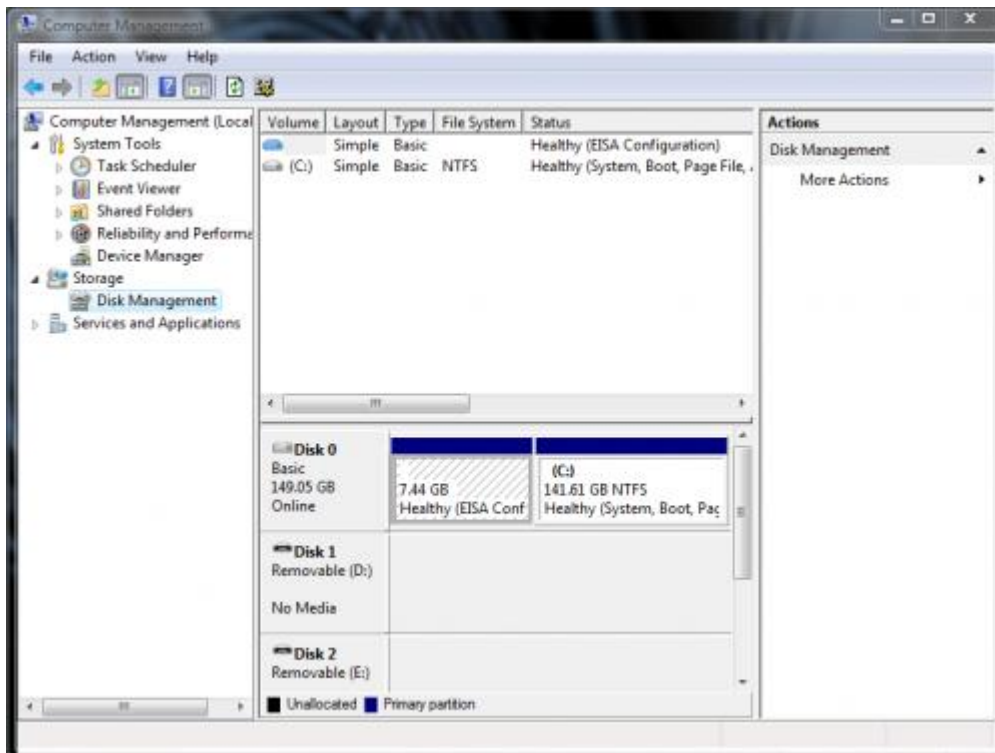
Vista did some things right. One such thing is hard drive partitioning. With Vista you are able to resize a partition, on the fly, without damaging data. Microsoft hid this tool a bit, so you have to know where it is. To open up the Computer Management tool click on the start menu and then right click the Computer entry.



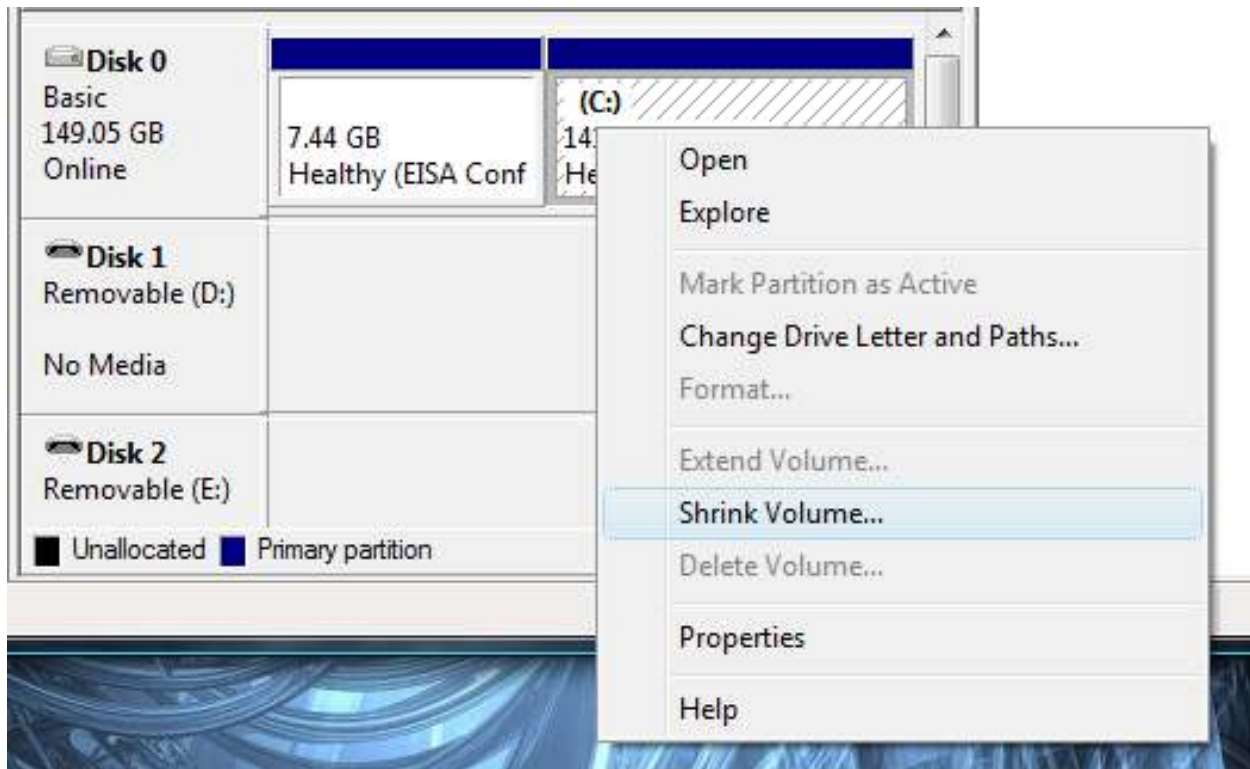
Click on the Manage entry from this new menu to open up the Computer Management tool.



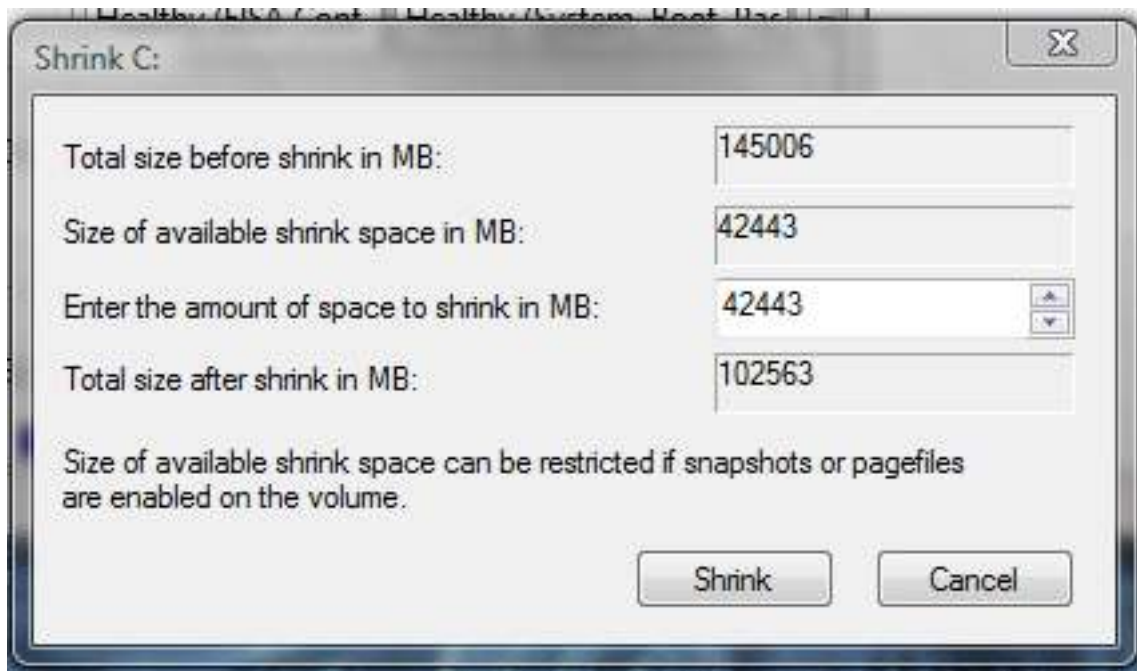
Now it's time to click on the Disk Management entry. Once you click on that you will see your machine's hard drive in all its partition'd glory.



There are two partitions on this drive. The larger partition (141.61 GB) is the partition to resize. Right click on that partition to open up a new menu. From this new menu select the “Shrink” entry.

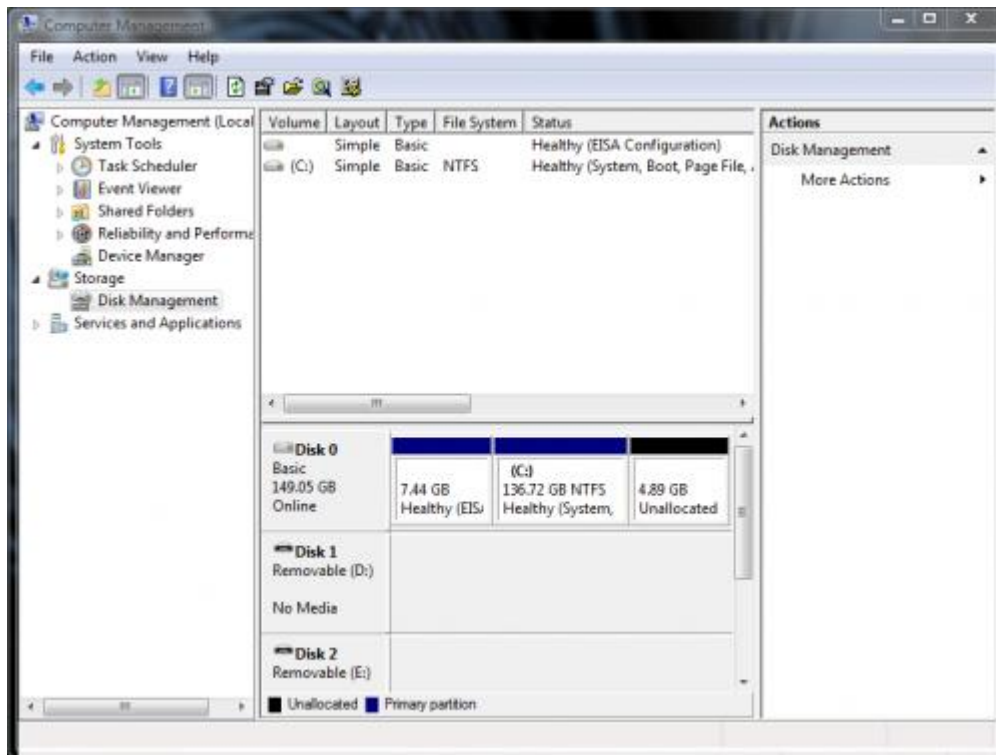


Once you select Shrink a new window will appear asking you how much to shrink the drive.



The amount of space to shrink will be the partition your Linux installation is on, so make sure you create enough space.

Once you click the Shrink button your machine will go to work resizing your partition. Once the partition has been resized there will be unallocated space on your drive.



In the image above I only resized the partition a small amount. You will need to create a much larger portion of unallocated space to install Linux.

Once the partition has been resized, it's time to load Linux.

Installing Linux

Since there are numerous distributions I will only touch on the key aspects you need to watch for. Most likely you will be installing from a LiveCD so boot the LiveCD up. Once the LiveCD has finished booting click on the Install icon to begin the installation process. The first section you need to pay close attention to is the partitioning of the hard drive. What you need to do is make sure the installation uses the **free space** on the drive. You most likely will have to select the Manual partitioning, but don't let that scare you. Once you select Manual you will have options to select. There should be the equivalent of using only the **free space** on your hard drive. Do NOT select anything remotely equivalent to Use Entire Disk. If you make this selection your Windows installation will be erased.

Once the installation partitions the drive it will install all the files it needs. Upon completion of the system installation it will be time to install the boot loader. Just accept the defaults because the Linux boot loader must be the first thing to load on the machine.

Once the boot loader is installed it's time to reboot. You will notice when you boot (again the exact wording and look of this will depend upon the distribution chosen) there will be a few boot entries. The default entry will be the Linux operating system. If you do nothing within 10 seconds Linux will boot. You can use your arrow keys to select the Windows choice and hit enter to boot into Windows.

Final Thoughts

Congratulations, you now have a dual booting Vista/Ubuntu machine. It's really that simple. If you need to have a guided tour of a Linux installation, take a look at my [Illustrated Guide to Installing Ubuntu](#).

[Install Linux on a USB drive with UNetbootin](#)

There are so many reasons why having a Linux distribution on a usb drive can come in handy. From having a "rescue" OS on your keyring to being able to install a new distribution on your EeePC, a "thumb drive" Linux has many uses. But getting Linux onto a usb drive can't be simple. Right? Wrong. There is a tool, UNetbootin, that makes installing Linux on a usb drive simple.

UNetbootin can be used on either Linux or Windows. In this article, we'll be illustrating the Linux side of things (naturally).

Note of warning: Not all usb installations will work on all machines. This can be an issue with your Bios or your USB drive. If you install an OS that doesn't work, try another. But after all that work, you might wind up with a machine that simply won't boot from a USB drive. You have been warned.

Now, on with the installation.

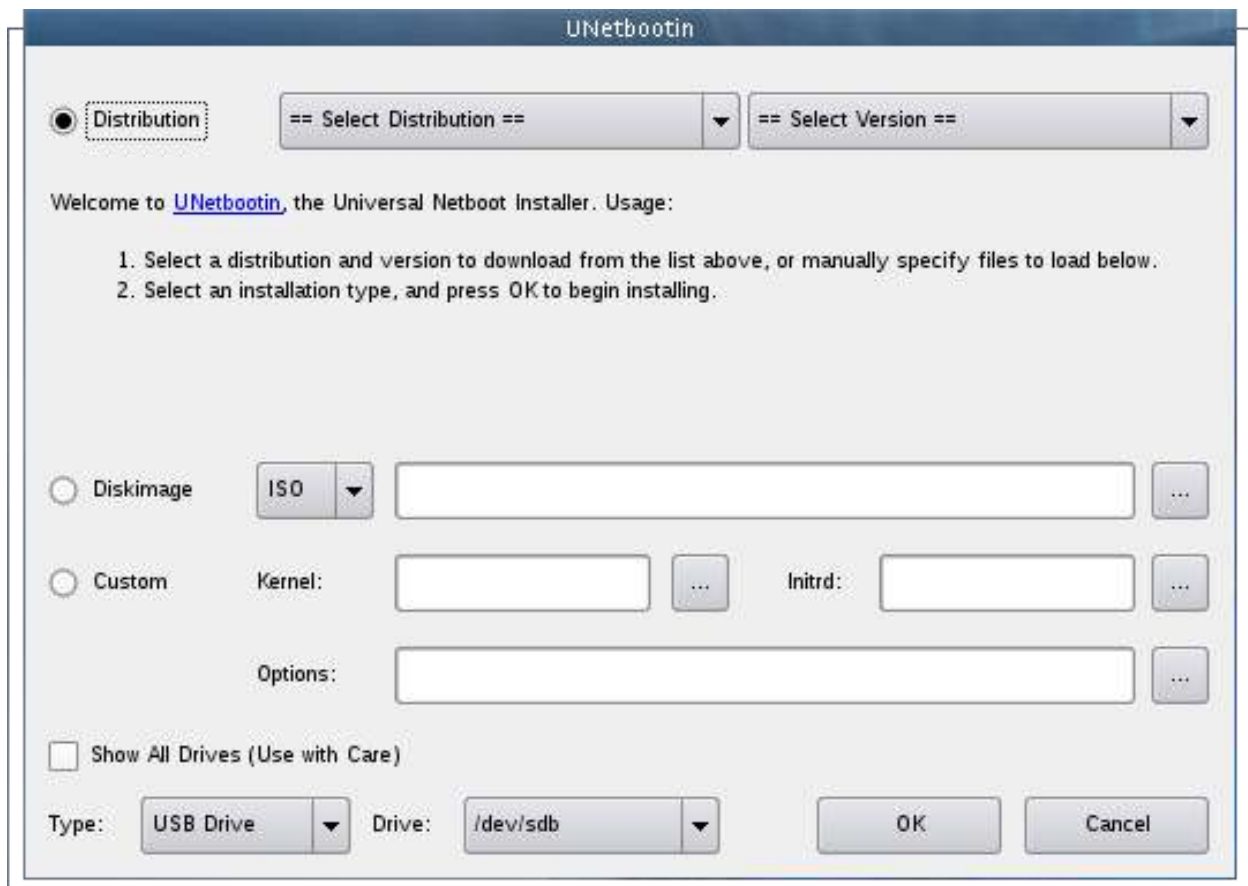
Getting and using UNetbootin

The first thing to do is download a copy of UNetbootin. For our purposes we'll download the Linux universal install binary (named `unetbootin-linux-299`). Once that has finished you will need to issue the command `chmod u+x unetbootin-linux299` in order to make the file executable. Once the file is executable, su to the root user and issue the command (from the same directory `unetbootin-linx-299` is stored) `./unetbootin-linux-299` to see the application running. But you're not ready just yet.

Depending upon your distribution, you might come across an error involving `p7zip-full`. This might be in your distribution's repositories. If you use Mandriva you can install `p7zip` but you

will not have the full package. If you use Unbuntu you can get p7zip-full with the command `apt-get install p7zip-full`.

Before you run the application you will need to insert and mount your usb drive. Stick in your usb drive and then issue `dmesg` to find out where your usb drive is located. Mount that and then issue, as root, `.unetbootin-linux-299`. When you issue the command you will see the UNetbootin window.



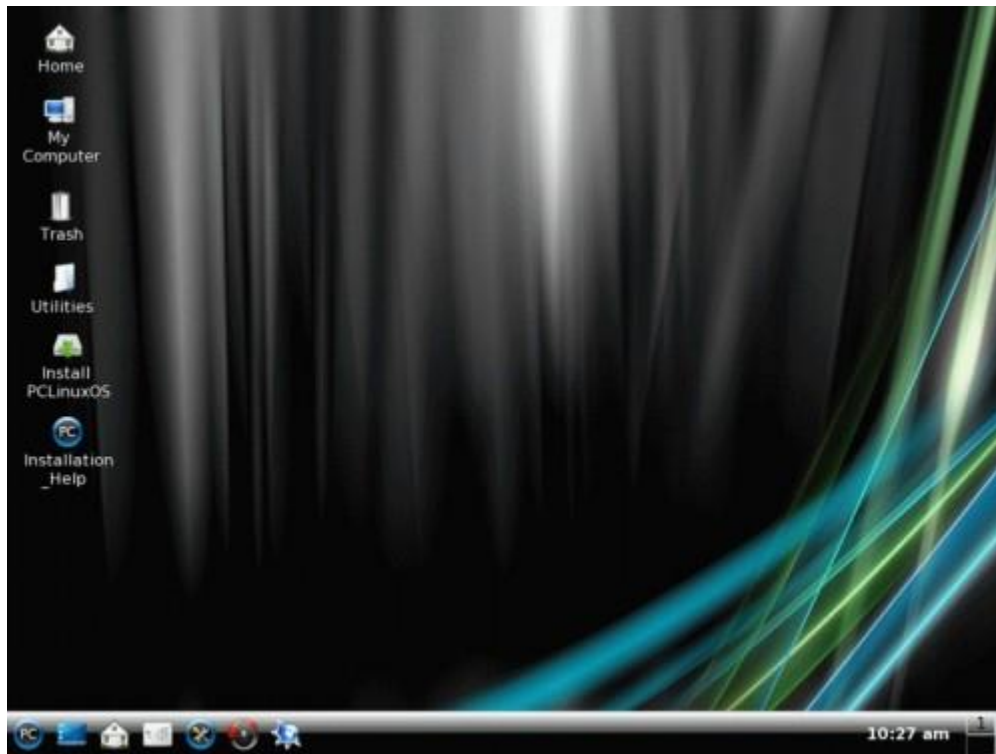
Once this window is up and running you are almost there.

If you have very specific needs for your distribution you will most likely have an image file downloaded to use. If you do not you can select your distribution from the drop down list. First you select the distribution and then you select the version (or release). NOTE: Unless you have a very large USB drive you will most likely want to use a netinstall version of your distribution. If you do happen to have a large USB drive you can go ahead with a full distribution. If this usb drive is for rescue purposes, or just to have a version of Linux with you at all times, a distribution like PCLinuxOS Minime is a great choice.

Once the process is done you will have two buttons to click, Reboot and Exit. Don't bother with the Reboot button. Click the Exit button and UNetbootin will close. You can now unmount your drive and reboot your machine to see if the installation works.

When your machine boots you will need to make sure it first boots from the usb device.

If you're interested to see what PCLinuxOS Minime looks like, take a look.

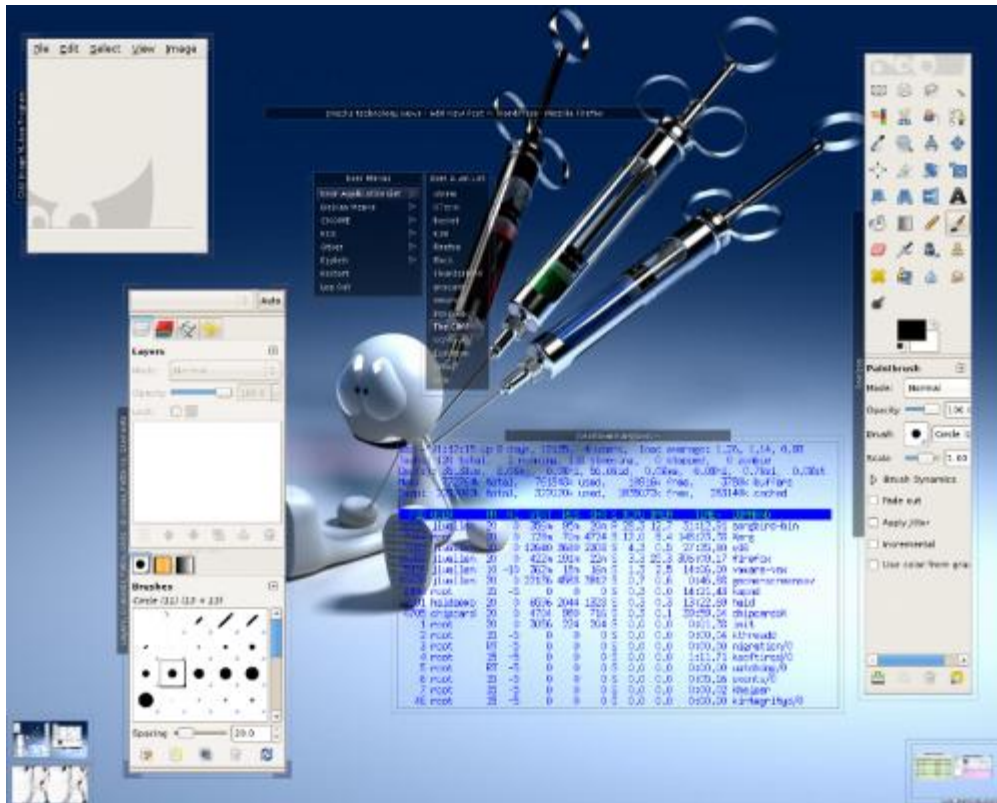


And that's it.

[Installing and Configuring Enlightenment E16](#)

Over the years I have used countless Linux desktops and window managers. But no matter how amazing a desktop (read: Compiz-Fusion) I always seem to wind up going straight back to Enlightenment. Enlightenment is one of those window managers that has a very small footprint yet offers enough eye candy to impress. But the appeal of Enlightenment goes beyond eye candy. Enlightenment is easy to use, flexible, and stable. Another bonus of Enlightenment - you can configure the desktop to have a psuedo-limiting effect on the users. Say, for example, you want to limit your users to certain applications - only have those applications in the menu and leave out any terminal window entry in the menu so they can't configure their *user_apps.menu* (more on that in a bit.)

But let's not jump ahead of ourselves. Before we get to the actual configuration let's first take a look at Enlightenment (version E16 which is the stable version).



As you can see Enlightenment has a lot of neat tricks up its sleeve. On the above screenshot you can see The Gimp open, a Firefox browser shaded to only show its title bar, the aterm terminal with full transparency running the top application, the iconbox (bottom right) which is where applications are minimized, and the pager (bottom left).

Now let's install E16. It shouldn't be necessary to jump through any hoops. On most modern Linux operating systems you can just open up the Add/Remove Software application (on Ubuntu this is Synaptic, on Fedora 10 running GNOME it is gpk-application) and do a search for "enlightenment". The package manager should pick up all dependencies.

If you'd prefer to use the command line you can run one of these (either as root or using sudo):

- apt-get install enlightenment
- yum install enlightenment
- urpmi enlightenment

If, by chance, your distribution doesn't find "enlightenment", you can try "e16" instead.

That should do it. Now, if you use a graphical login screen you'll want to choose the E16 entry before you log in. This should be under "Sessions". If you use text-based log in you will want to create an `.xinitrc` file with the following contents:

```
exec e16
```

If that doesn't work us:

exec enlightenment

Most likely the former will work.

Configuration

If you do a left mouse click you will see the configuration window.



The one thing you can not configure via the configuration menu is the menu itself. To configure the menu you have to actually edit the file `~/.e16/menus/user_apps.menu`. It is very easy to edit this menu. Open this menu up in your favorite text editor and you will see entries that resemble:

```
"aterm" NULL exec "aterm -tr -fg blue -bg green +sb"  
"XTerm" NULL exec "xterm"
```

“rxvt” NULL exec “rxvt”
“Basket” NULL exec “basket”
“Mozilla” NULL exec “mozilla”
“K3B” NULL exec “k3b”
“Firefox” NULL exec “firefox”
“Flock” NULL exec “/home/jlwallen/flock/flock-browser”
“Thunderbird” NULL exec “thunderbird”
“gnucash” NULL exec “gnucash”
“Amarok” NULL exec “amarok”
“Banshee” NULL exec “banshee”
“The GIMP” NULL exec “gimp”

A menu entry is set up like so:

Comment Icon **exec** “command”

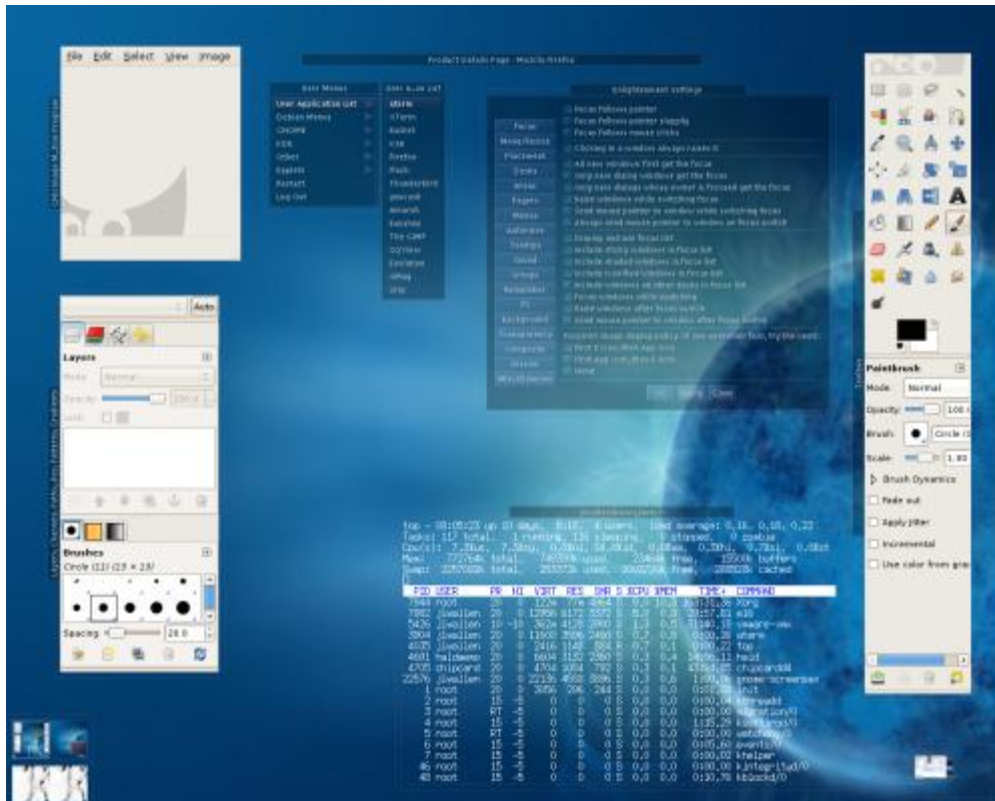
The comment is the text that appears in the menu. Icon is the actual path to an icon image to use (NULL means none), The **exec** command is necessary to tell the system that what follows is an executable command. The command section is the actual command.

Once you edit that file, save it, and the changes are made in real time.

Final Thoughts

And that’s pretty much it to configuring Enlightenment E16. If you have a Linux box you should certainly give Enlightenment a try. It might wind up being your “go-to” desktop.

UPDATE: Here’s a new screenshot, full size, for your enjoyment.



[Install phpmyadmin for easy MySQL administration](#)

I have been working with LAMP (Linux Apache, MySQL, PHP) servers for a long time. But not matter how much experience I have with them one of the first things I, do after the LAMP installation, is to install phpMyAdmin. This tool makes database administration so much easier than the command line. And when your job is rolling out sites that depend upon MySQL databases, you know how quickly MySQL can fubar a quick deployment.

In this article you will learn how to install and configure the phpMyAdmin MySQL tool.

The first step is to download phpMyAdmin. You can get this tool from the phpMyAdmin download page. Once you have this downloaded you will need to move the file into the document root of your web server (you will need to have root or sudo access to do this and the setup) Most likely this will be either `/var/www/html` or `/var/www`. Once you have this file in the proper locaton it is time to take care of business.

The first thing to do is to unpack the file. The unpacking command will depend upon what file format you download. Let's use the .gz file for an example. With the file `phpMyAdmin-3.1.1-english.tar.gz` in place issue the command:

```
tar xvzf phpMyAdmin-3.11-english.tar.gz
```


The resulting directory will be **phpMyAdmin**. I highly recommend changing the name of that directory to something easier to navigate and remember. I generally just change the directory with the command `mv phpMyAdmin phpmyadmin`.

Now that the directory is correct move into the directory. There is one file in particular you must have which is the **config.inc.php** file. You will notice there is a file called **config.sample.inc.php**. Some documentation instructs to change the name of **config.sample.inc.php** to **config.inc.php** and make your changes from within that file. It is my opinion that method can become confusing with all of the extra options included. Instead create the new config file with the following contents (depending upon your setup):

```
$i++;
$cfg['Servers'][$i]['user'] = 'root';
$cfg['Servers'][$i]['password'] = 'ROOT_PASSWORD';
$cfg['Servers'][$i]['verbose'] = '';
$cfg['Servers'][$i]['host'] = 'localhost';
$cfg['Servers'][$i]['port'] = '';
$cfg['Servers'][$i]['socket'] = '';
$cfg['Servers'][$i]['connect_type'] = 'tcp';
$cfg['Servers'][$i]['extension'] = 'mysqli';
$cfg['Servers'][$i]['auth_type'] = 'config';
$cfg['Servers'][$i]['AllowNoPasswordRoot'] = true;
$cfg['Servers'][$i]['nopassword'] = true;
```

There are a few pieces to note. First make sure you use the actual root mysql password where you see `ROOT_PASSWORD`. Also, if you want to be prompted each time for your login information change `'config'` to `'cookie'` in the `'auth_type'` line.

Once you have that configuration file in place you should be able to log into your phpmyadmin system. To do this you will enter `http://ADDRESS_TO_SERVER/phpmyadmin/` in your browser (where `ADDRESS_TO_SERVER` is the IP Address or URL that points to the server).

If, for some reason, this configuration file does not work for you give the web-based setup script a try. To run this point your browser to `http://ADDRESS_TO_SERVER/phpmyadmin/setup` to start the graphical setup process.

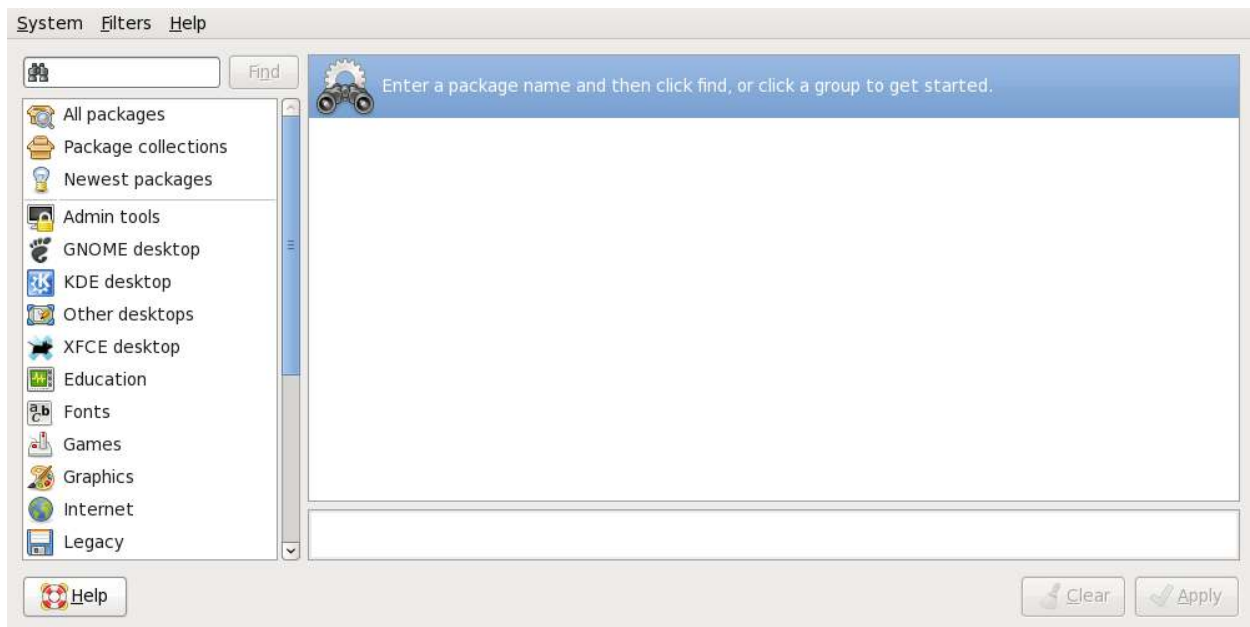
After you are logged in it should be pretty obvious how to create a new database. You simply enter the name you want to give the database and click the Create button.

You're done! You now have a phpmyadmin install ready to serve you.

[Installing Applications in Linux with GNOME PackageKit](#)

If you have used Fedora in the past you might be well acquainted with rpm (Red Hat Package Manager). But if you have taken a gander at Fedora Core 10 you might have noticed a new sheriff in town. That sherrif? GNOME PackageKit (gpk-application). GPK makes package [management](#) a very simple task.

You will find GPK in the Administration sub menu under the System main menu. The entry will be listed as Add/Remove Software. You will have to give the root password in order to start the application. When you start the application you will find yourself in the main window.

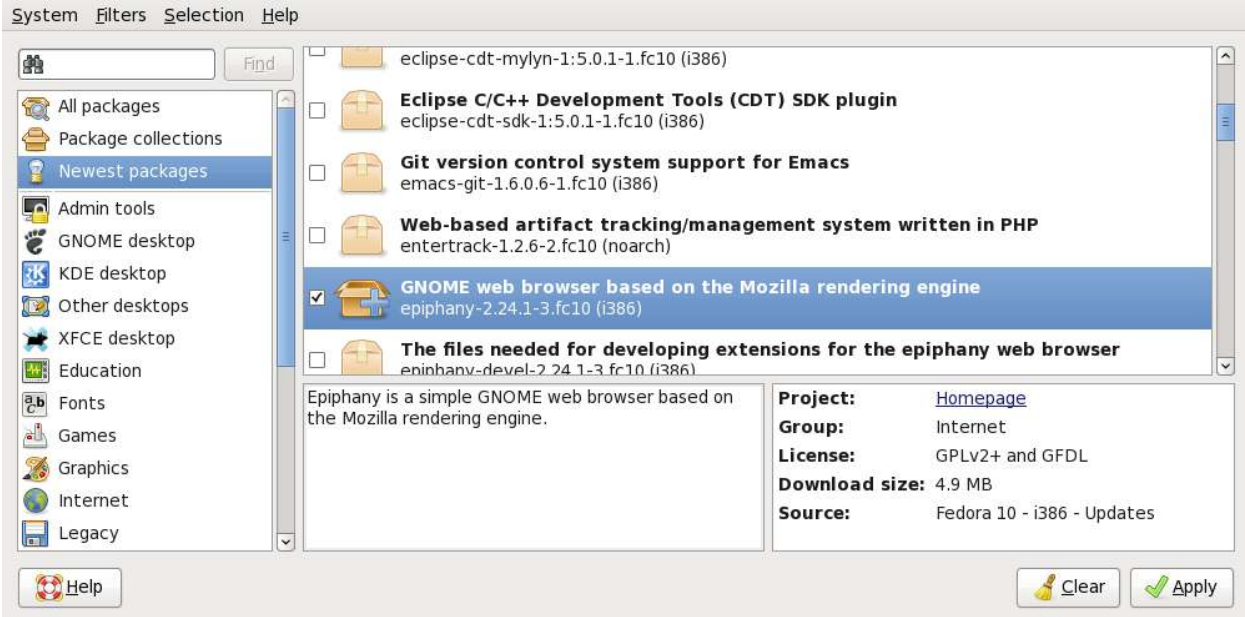


The main window is very well laid out. On the left side is a listing of all categories included in the packages. The right two panes are: Top - package listing (appears when you click on a category) and Bottom - package description (appears when you click on a package.)

Let's say you want to find out what new packages are available. Before you click on any category, however, it might be best to refresh the list of packages. What this does is checks your configured repositories to see if any packages have been updated. Once the list of packages has been regenerated you can go about your tasks.

Now we'll take a look to see what new packages are available to the system. Go to the left pane and click on Newest Packages. Immediately you will a listing of the packages available in the upper right pane. Scroll down to find the "Epiphany Web Browser".

Once you have found the package to install click the check box. The description will appear below the package listing.



Once you have selected the package to install the Apply button will appear. Click on Apply and the system will attempt to resolve all dependencies. Once the dependencies have been resolved a new windows will open asking if you want to Install the necessary dependencies. Of course you have to agree to install the dependencies in order to continue on with the installation.



Once you click install both the dependencies and the application will be installed. Upon completion, if applicable a new window will appear asking if you want to run the newly installed application.



If you don't want to run the application immediately you can close this and run the application later from the menu.

Final Thoughts

And that's it. GPK makes installation applications in Fedora 10 a breeze. Not only is the process simple, but finding applications to install is as easy as it gets.

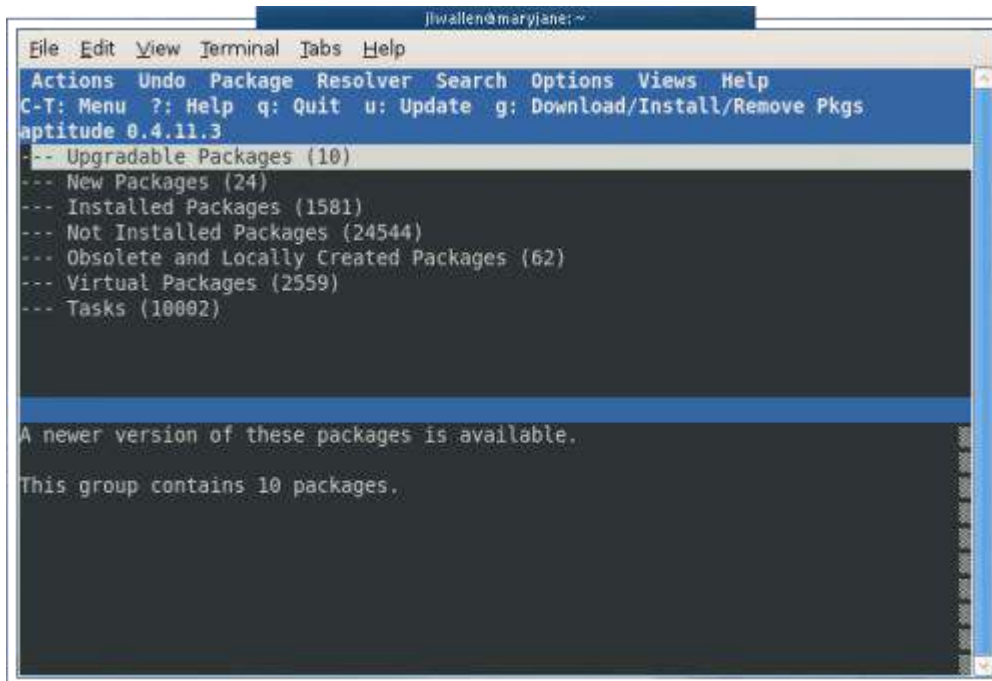
[Installing Linux applications with Aptitude](#)

For those of you who like a little more power behind your tools you will certainly appreciate the Aptitude front-end for the apt package management system. Aptitude is based on the ncurses computer terminal library so you know it's a pseudo-hybrid between console and gui. Aptitude has a powerful search system as well as an outstanding ncurses-based menu system that allows you to move around selections with the tab key and the arrow keys.

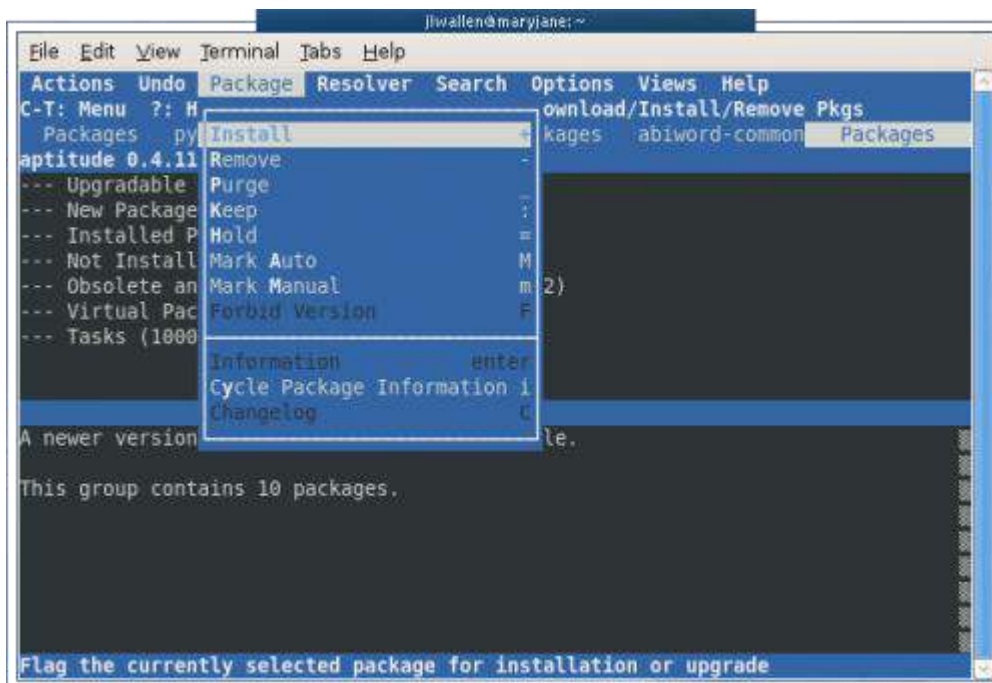
But don't think, when you fire up Aptitude, you are going to be greeted with a sexy graphical front end. No. When you start up this application you are going to be teleported back into the mid-90s when front-end applications were just arriving onto the scene. But Aptitude is so much more than that. Aptitude is a powerful tool to help you use the apt package management system.

To open Aptitude you need to first open a terminal emulator (such as aterm, gnome-terminal, or konsole). I will warn you, if you are like me and use Aterm in full-blown transparency Aptitude might look a little strange. So instead you should fire up another terminal or use Aterm without transparency.

To start up aptitude you will need root or sudo access. Using sudo you would start Aptitude like so: *sudo aptitude*.

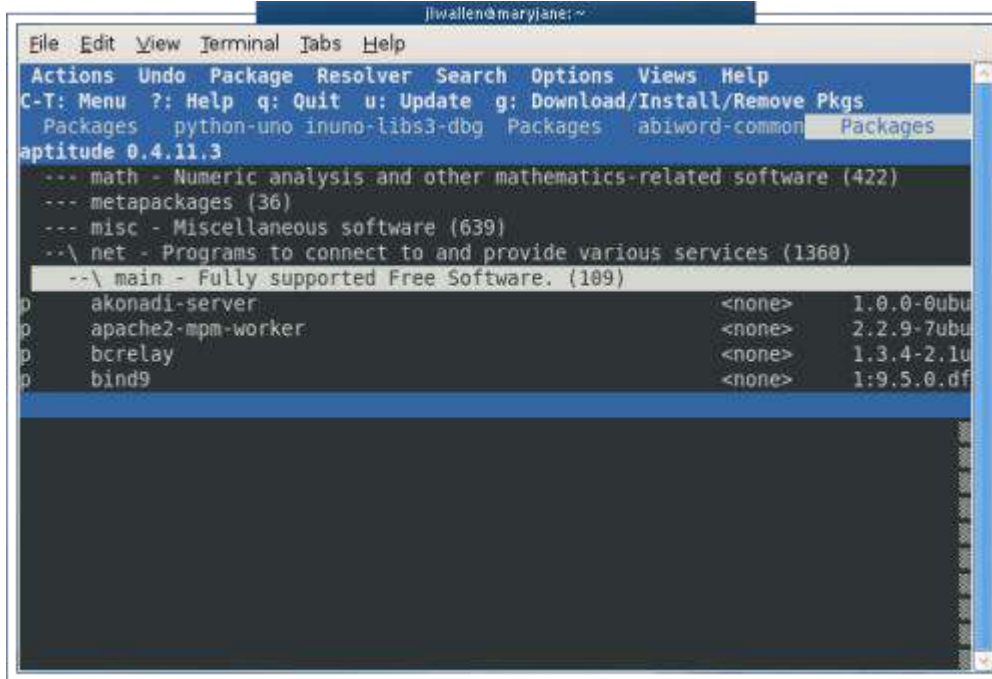


There are two main sections to focus on. First is the main window. This is where you will see a listing of the what is available. As you can see from the image above there are upgradable packages, new packages, etc. What you don't see is the Aptitude menu. To access this menu you have to hit the Ctrl-T combination (that is the Control key plus the "t" key at the same time.) When you open up the Aptitude menu you navigate this menu using the arrow keys.



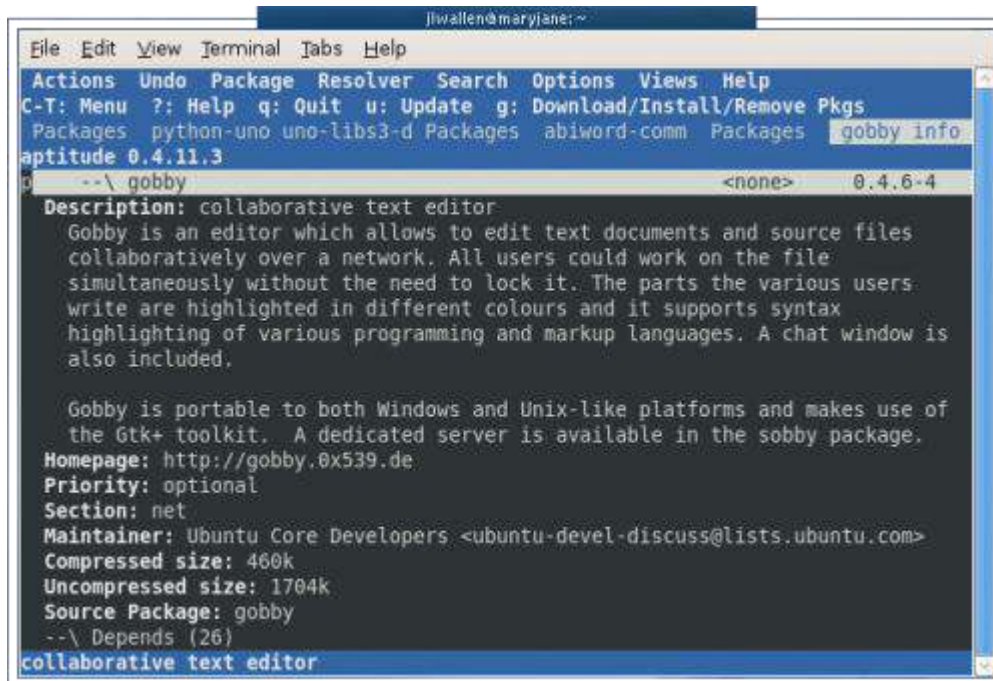
Before you actually get into installing packages with Aptitude, you have to select packages to install. You do this outside of the menu in the main window. Without the menu open you can move up and down the window entries with the arrow keys. When you land on an entry you want to expand you hit the Enter key. Let's install something.

Using the arrow keys move down to the "Not Installed Packages" entry and hit Enter. This will expand to reveal a number of sub-menus. Now scroll down to the Net sub-menu and hit Enter. Yet another sub-menu will appear containing three entries. Move to the "main" main entry and hit Enter to reveal all of the possible applications to install.



```
jlwallen@maryjane: ~  
File Edit View Terminal Tabs Help  
Actions Undo Package Resolver Search Options Views Help  
C-T: Menu ?: Help q: Quit u: Update g: Download/Install/Remove Pkgs  
Packages python-uno inuno-libs3-dbg Packages abiword-common Packages  
aptitude 0.4.11.3  
-- math - Numeric analysis and other mathematics-related software (422)  
-- metapackages (36)  
-- misc - Miscellaneous software (639)  
-- \ net - Programs to connect to and provide various services (1360)  
-- \ main - Fully supported Free Software. (109)  
p akonadi-server <none> 1.0.0-0ubu  
p apache2-mpm-worker <none> 2.2.9-7ubu  
p bcrelay <none> 1.3.4-2.1u  
p bind9 <none> 1:9.5.0.df
```

Let's install Gobby (a text editor/source editor that can do online collaboration). With the arrow keys move down until you see the Gobby entry. When you find Gobby hit the Enter key which will reveal all of the gory details behind Gobby.

The image shows a terminal window titled 'jwallen@maryjane: ~'. The window displays the APTITUDE package manager interface. At the top, there is a menu bar with 'File Edit View Terminal Tabs Help'. Below that, a status bar shows 'Actions Undo Package Resolver Search Options Views Help' and 'C-T: Menu ?; Help q: Quit u: Update g: Download/Install/Remove Pkgs'. The main content area shows the package 'gobby' selected. The description reads: 'collaborative text editor. Gobby is an editor which allows to edit text documents and source files collaboratively over a network. All users could work on the file simultaneously without the need to lock it. The parts the various users write are highlighted in different colours and it supports syntax highlighting of various programming and markup languages. A chat window is also included. Gobby is portable to both Windows and Unix-like platforms and makes use of the Gtk+ toolkit. A dedicated server is available in the gobby package. Homepage: http://gobby.0x539.de Priority: optional Section: net Maintainer: Ubuntu Core Developers <ubuntu-devel-discuss@lists.ubuntu.com> Compressed size: 460k Uncompressed size: 1704k Source Package: gobby --\ Depends (26) collaborative text editor'. The package name 'gobby' is highlighted in blue at the top of the description area.

This should tell you everything you need to help you make the decision to install or not to install Gobby. Let's install it.

To select an application for installation hit the “+” key (you do have to use the Shift key for this) to mark the package for installation. Now hit the “g” key and the installation process should begin. Don't be fooled when it seems as if APTITUDE has dropped out of ncurses mode and is in full console mode, it will return to it's ncurses glory when after you hit the Enter key when prompted (after installation is complete.)

When installation is complete you will return to the description of the package you just installed. To go back to the main window you can open up the menu (Ctrl-t) and then using the right arrow key go to the View entry. Using the down key select “Prev” to go to the previous screen. You can also hit F7 for this same action.

And there you are, you have just installed an application with APTITUDE. Of course APTITUDE is much more powerful than this. In later articles we'll discuss searching, upgrading, removing, and much more with APTITUDE.

In the mean time, have fun installing with APTITUDE!

[KompoZer, a free, open-source and half-decent WYSIWYG web editor](#)

Dreamweaver and Frontpage are no doubt the most popular WYSIWYG (what-you-see-is-what-you-get) HTML editors but carry a pretty large pricetag, with Dreamweaver costing about £500! Naturally, neither work under Linux either! KompoZer is a free, open-source and cross-platform WYSIWYG editor which should fill the needs of any home user.

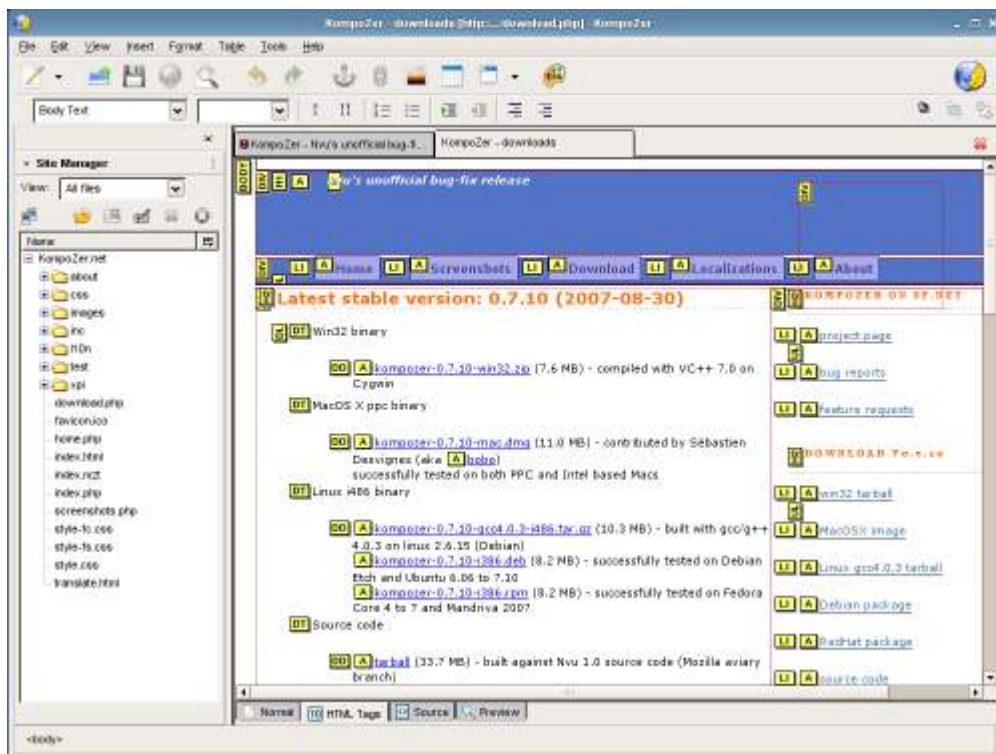
Whilst KompoZer has not been updated since 2007, the major mark-up languages haven't changed since then so it should still work. KompoZer is based on Gecko, the rendering engine which Mozilla amongst others utilise, and is a fork of Nvu (another WYSIWYG editor which is now not developed), itself a fork of Mozilla Composer!

KompoZer has all the obvious features of a WYSIWYG web editor: HTML and CSS can be edited; FTP support; tables; and tabs to navigate between pages and views. Some nicer features include an integrated W3 validator and support for XFN.

Binaries are available for Win32, PPC Macs (which will run on Intel-based ones) and Linux. Source is also available so it can be compiled for other operating systems.

Like Nvu, the application can be used from a USB pen.

I personally use KompoZer if I quickly need to whip up a webpage and I don't have the patience to code it in Textmate. It's certainly usable, produces relatively clean code and it's £500 cheaper than Dreamweaver!



[Make KDE 4 More User-Friendly by Changing Window Behavior](#)

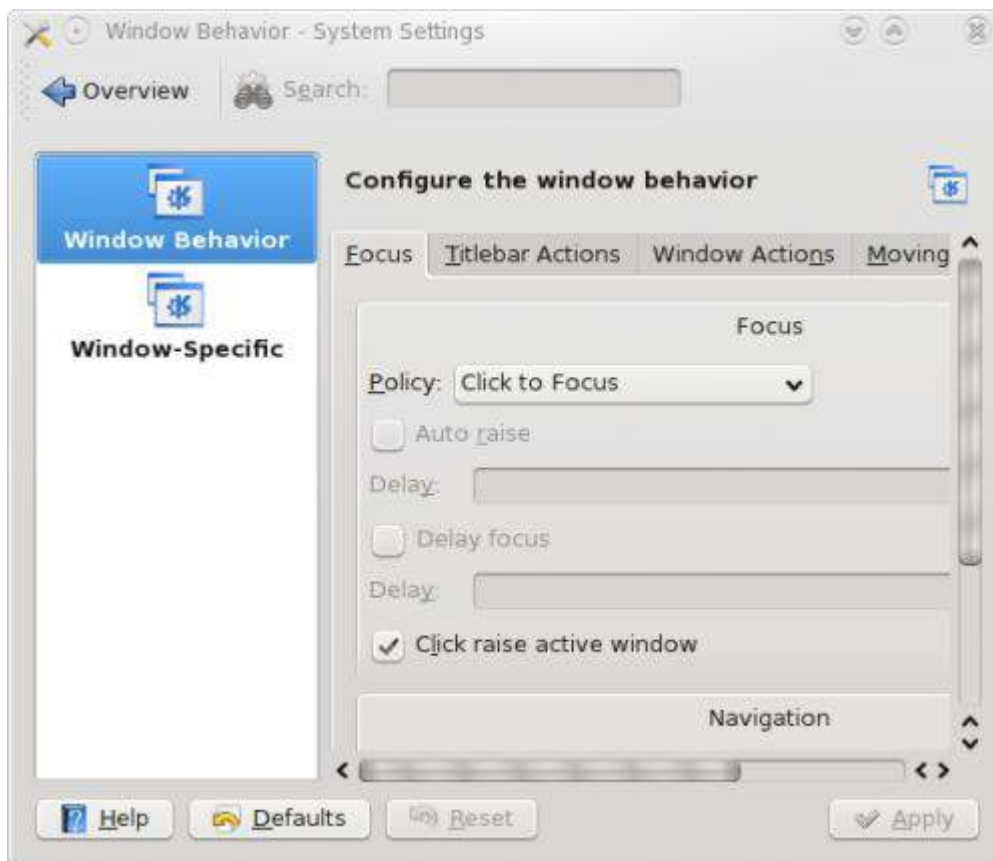
If you are using a distribution that now ships with KDE 4 you might notice the desktop is less than user-friendly. From the main menu to the panel, KDE 4 has a way to go before it fits the bill for every-day production use. But there are ways to make your KDE 4 desktop much better. Once

portion of the desktop you can change for the better is the default window behavior. These behaviors can be changed quickly in order to make KDE 4 much more user-friendly.

The default behaviors we are going to change are:

- Focus
- Auto-raise
- Title Bar double click

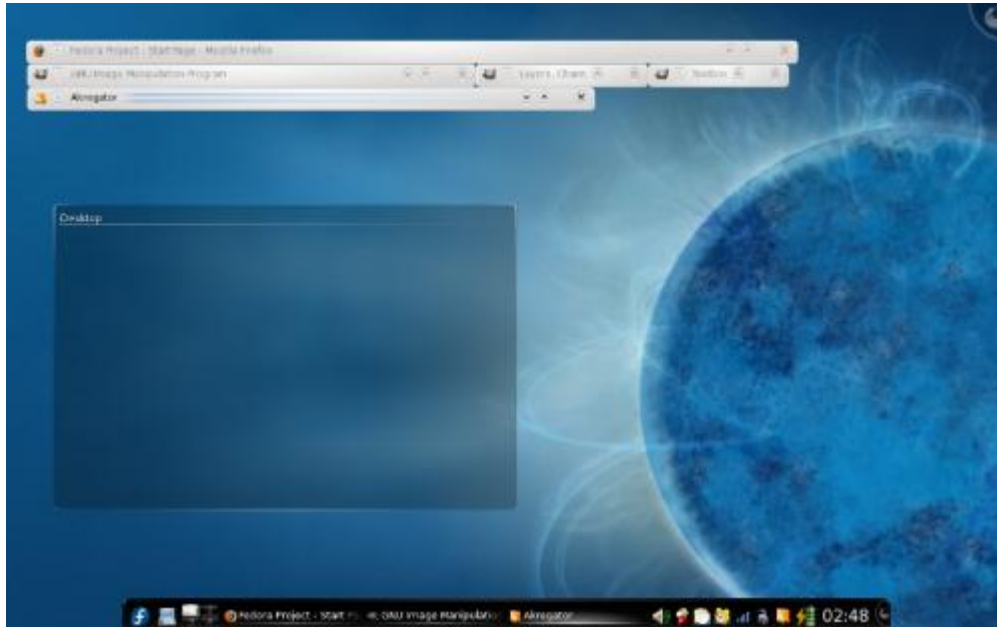
These behaviors are configured in the System Settings window. To get to the System Settings window go to the main menu and select System Settings in the Favorites tab. Once the System Settings window opens click on the Window Behavior and you'll see a number of tabs.



The first configuration is the Policy. From the Policy drop-down select "Focus Follows Mouse" (The window directly under the mouse has focus). Now click the Auto Raise option (When a window has focus it raises above all other windows). If you want to configure an delay for the auto raise you can enter a value (in milliseconds) in the Delay text area.

Now click on the Titlebar Actions tab. In this tab you will want to take a look at the Titlebar Double-Click action. One of the best options is the Shade option. When you enable the Shade option your window will roll up into the titlebar on a titlebar double click.

Once you have made the changes click the Apply button and the changes will be in place.



Above you can see how a grouping of shaded windows can help to keep your desktop organized. Need to use one of your windows...double click it to unshade it.

There are plenty of options to configure in KDE 4. But for some quick and simple configurations that will make your desktop workspace much easier to use, you can't be these Window Behavior settings.

[Use Aterm for Transparent Terminal Effects](#)

If you're like me you wind up using the command line a LOT. And when I am in the command line I prefer to at least enjoy the experience. To help add a little joy to this experience I use Aterm. Aterm is the termin emulator that was developed for the AfterStep window manager. That doesn't mean Aterm is exclusive to the AfterStep window manager. You can install and use Aterm on any [Linux desktop](#) environment.

But with the plethora of terminal emulators available, why would you add yet another? Aterm offers some features that most other players can not touch. One of the more obvious features is that of transparency. I know, I know - both GNOME and KDE terminals do transparency, but not as easily and as well as aterm. Let's see how this is done.

First and foremost to get aterm to open with various forms of transparency you will be issuing a command. Once you have settled on the exact combination of arguments you like you can then create an icon, launcher, or menu entry to suit your needs.

With that in mind let's take a look at some of the options to allow you to get some funky-ness with aterm.

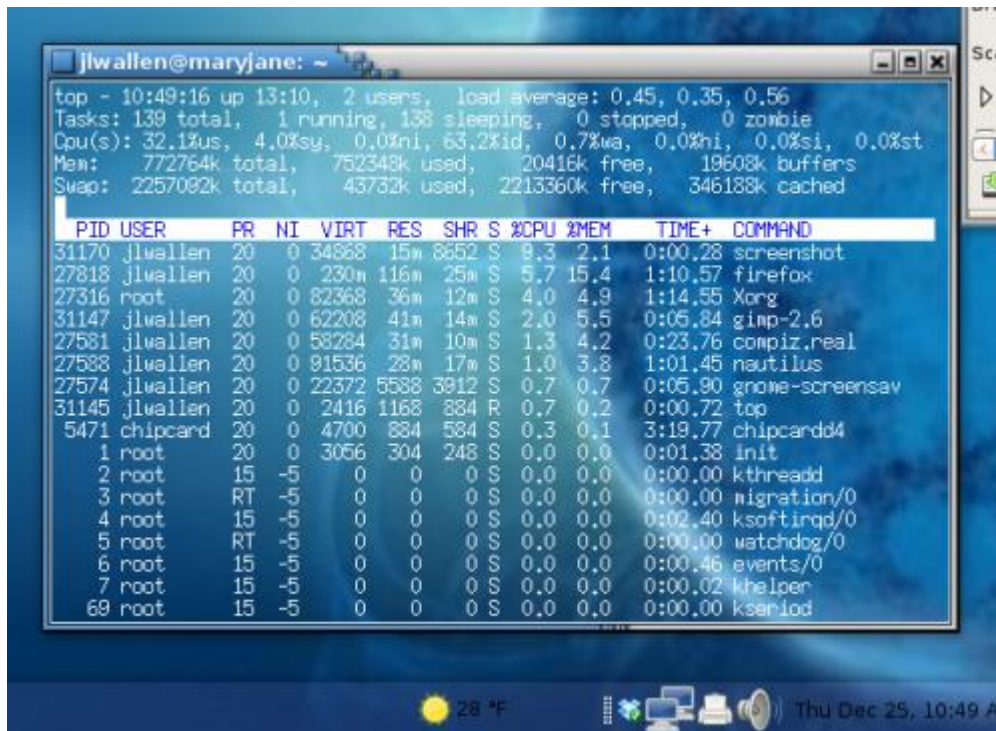
the first thing we will do is basic transparency. To get basic transparency you execute the aterm command like so:

```
aterm -tr
```

To expedite coolness I am going to add a couple of switches:

```
aterm -tr -fg white -bg blue +sb
```

The above command will produce an aterm like you see below.



```
jllwallen@maryjane: ~
top - 10:49:16 up 13:10,  2 users,  load average: 0.45, 0.35, 0.56
Tasks: 139 total,  1 running, 138 sleeping,  0 stopped,  0 zombie
Cpu(s): 32.1%us,  4.0%sy,  0.0%ni, 63.2%id,  0.7%wa,  0.0%hi,  0.0%si,  0.0%st
Mem:   772764k total,  752348k used,  20416k free,  19608k buffers
Swap:  2257082k total,  43732k used,  2213360k free,  346188k cached

  PID USER      PR  NI  VIRT  RES  SHR  S  %CPU  %MEM    TIME+  COMMAND
 31170 jllwallen  20   0 34868  15m 8652  S   9.3   2.1   0:00.28 screenshot
 27818 jllwallen  20   0  230m 116m 25m  S   5.7  15.4   1:10.57 firefox
 27316 root       20   0 82368  36m 12m  S   4.0   4.9   1:14.55 Xorg
 31147 jllwallen  20   0 62208  41m 14m  S   2.0   5.5   0:05.84 gimp-2.6
 27581 jllwallen  20   0 58284  31m 10m  S   1.3   4.2   0:23.76 compiz.real
 27588 jllwallen  20   0 91536  29m 17m  S   1.0   3.8   1:01.45 nautilus
 27574 jllwallen  20   0 22372  5588 3912  S   0.7   0.7   0:05.90 gnome-screensav
 31145 jllwallen  20   0  2416 1168  884  R   0.7   0.2   0:00.72 top
  5471 chipcard  20   0  4700  884  584  S   0.3   0.1   3:19.77 chipcardd4
     1 root       20   0  3056   304  248  S   0.0   0.0   0:01.38 init
     2 root       15  -5     0     0     0  S   0.0   0.0   0:00.00 kthreadd
     3 root       RT  -5     0     0     0  S   0.0   0.0   0:00.00 migration/0
     4 root       15  -5     0     0     0  S   0.0   0.0   0:02.40 ksoftirqd/0
     5 root       RT  -5     0     0     0  S   0.0   0.0   0:00.00 watchdog/0
     6 root       15  -5     0     0     0  S   0.0   0.0   0:00.46 events/0
     7 root       15  -5     0     0     0  S   0.0   0.0   0:00.02 khaltper
    68 root       15  -5     0     0     0  S   0.0   0.0   0:00.00 kseriod
```

Basic aterm transparency

What I did with the above command is:

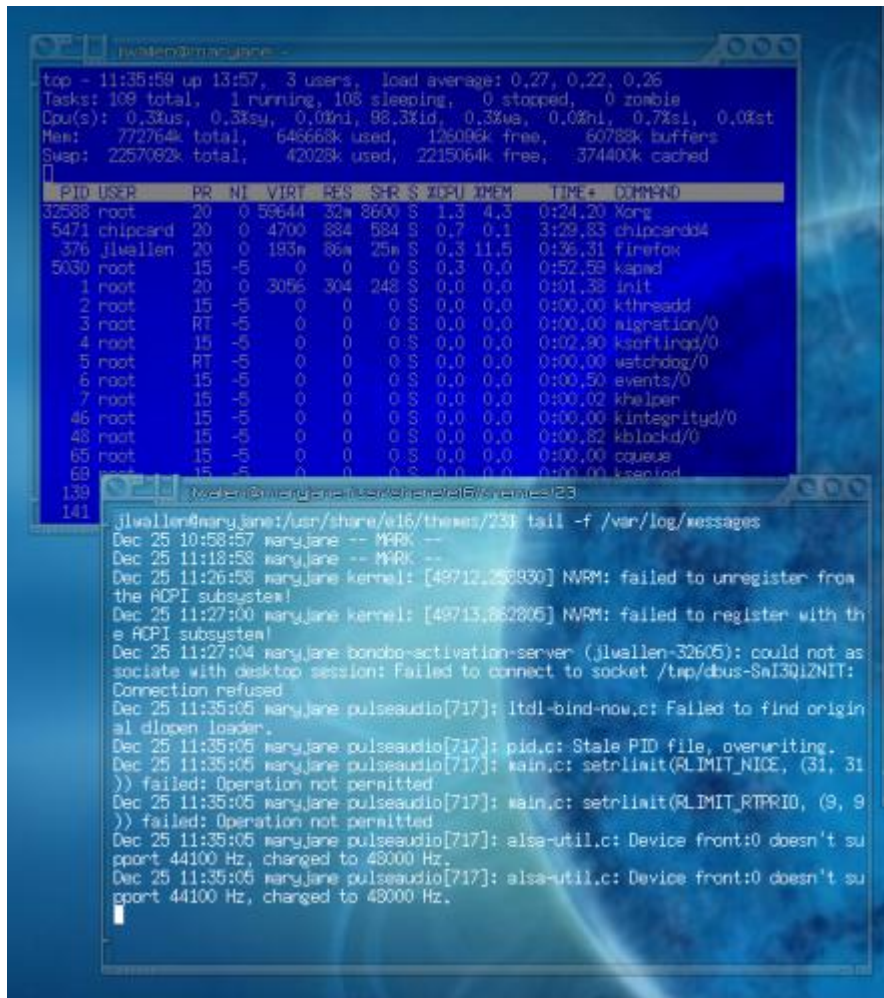
- tr - Enable transparency
- fg - Change the foreground color (text)
- bf - Background color (highlight)
- sb - With the "+" symbol the scroll bar is turned off

That is not all we can do. Let's add the following:

tint - Add a tinting color to the transparency

fade - Fade the contents of the aterm window when it no longer has focus. The amount is from 0-100 with 0 being the most fade.

Here's what the command `aterm -tr -tint blue -fade 50 -fg white -bg blue +sb` will look like.



Naturally you'll want to play around with colors and fade amounts depending upon your theme/background.

Final Thoughts

This has given you but a taste of what the aterm terminal emulator can do. If you're like me, and you like some desktop eyecandy, this is a great way to get it without having to pump up your resources or spend all day tweaking.