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**ubuntu**  
karmic koala  
**bible**

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# 0. Introduction

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Detailing every aspect, this reference helps you to set up, enhance and use the ultimate installation of Ubuntu's superb new operating system.

Stepped out in easy-read copy/paste detail, these how-to guides and tutorials are great for Linux initiates and invariably handy for Linux intermediates.

**For real newbies, also check out our ultra-simple [Getting Started Guide to Linux](#).**

Oozing cute tips and tweaks, the Karmic Koala Bible gives you:-

- partition planning
- the installation process
- software installation advice
- best in class software tips
- easy-to-use terminal commands
- fine-tuned software repository list
- pc speed & stability tweaks
- automounted partition/drives guide
- Nautilus, keyboard & apps shortcuts
- detailed security guide
- VirtualBox guide for other systems

So make the most of Ubuntu's newly kernelled, beautifully bundled OS, for work and play. Don't know what something is? No worries, you will :)

- 1 -

# A Fresh Install

## Choosing an Edition

---

So what's the difference between the Desktop & Server editions? Basically, the kernel. Server's is configured for the demands of a web server, Desktop's for those in a home or production environment.



Otherwise ..

Ubuntu Desktop comes bundled with a suite of useful applications. Straight out of the box, you can surf the web, read email, create documents and spreadsheets, edit images, organise media and more. With Karmic, for the first time, you can even sync docs with a free 2gB online storage space, sharing those between machines, colleagues and friends.

And, of course, Desktop's graphic user interface (GUI) makes it easy to see what you're doing.

Ubuntu Server is an OS that's cut to the bone, honed to process only those tasks that are key to its purpose, such as email and websites. There is no GUI.

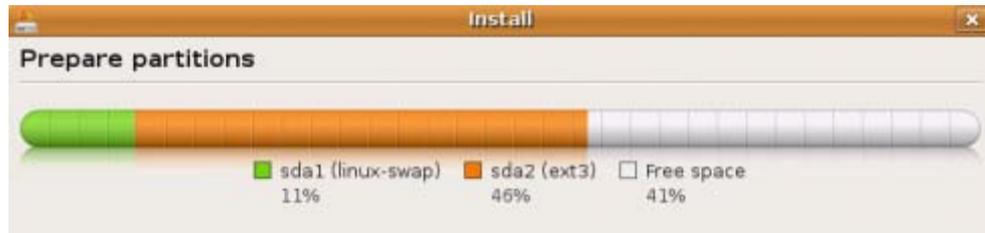
So you could use either, whether for a local development requirement or to run your live web server (although it would waste resources to use Desktop for that.) Tailoring either is simply to add and delete whatever packages you want. For example, with Server, you can add a friendly GUI with a single command.

In practise, though, for most of us, we'd be better off using Desktop for home or office (including for developing non-live web applications) and, for 100% of us, using Server edition for a live server.

If you still aren't sure, you need the Desktop edition!

# Dividing the Hard Drive

---



Pre-install, mapping out data/system demands for optimal disk segmentation saves headaches down the road. Here's a heads-up to help. You don't have to, but it is a mighty good idea to put pen to paper, ring-fencing the departmental demands you will have on your overall hard disk, or disks.

For instance, you may require space for:-

- a boot manager (the first thing on the disk, a few mB)
- the Karmic Koala operating system
- your personal documents and settings, which generally are housed in your /home directory
- another operating system
- and maybe another again
- a downloads location
- a location for your music collection
- another for your movies
- and another for pics
- maybe one for websites/special projects
- a place for backup, else an image of all the above, ideally on a separate hard drive
- swap (RAM overflow)
- you get the idea!

How you divvy up the drive is a personal thing, but split it up you will, easily enough, the key partitions being created during the installation process, else prior to that if you use a tool like GParted.

The only must is for any operating systems to be separated, as should the swap file. Furthermore, backup should be in its own location, ideally not just on a separate partition but on an independent hard drive. It is recommendable also to separate user data, housed in the /home folder, to its own partition.

## What is a Partition?

Think of your hard drive as a very solid building. Impermeable walls separate the rooms, or partitions, each with their own purposes. If you set fire to one room, the others will be unaffected.

It is due to the risk of total disk failure (the building collapses!) that you should store backup on a separate volume altogether.

### What is SWAP?

If you run out of RAM, a small slice of your disk is called to temporarily take the slack. With Windows, they call that virtual memory.

At its barest, in my honest opinion, your partition plan should comprise:-

- the Karmic Koala operating system
- another operating system (if you want another)
- your personal documents and settings (/home) to include all personal media
- backup, but on a separate hard drive
- swap (RAM overflow)

.. so, of the primary or only hard drive, you have partitions for each of those sections, with backup on another disk. OK, you don't have another disk and really don't want to buy one? This is not good advice, but you can have backup on another partition on the same drive too, or risk all and don't even backup (that is terrible advice!)

Alternatively, the barest possible would look like this:-

- the Karmic Koala operating system, including your /home directory
- another operating system (optional)
- swap (RAM overflow)

.. so that's two partitions, plus one for each subsequent OS.

If you are considering your first future-proof multi-partition setup, and really want to get it right, I suggest you Google a lot. If you want to share docs between, say, Windows and Linux, there are methods to allow you to do that too, so Google again. (For any Windows system, your personal docs should be on a separate partition too, especially as the damn thing always breaks).

### Should I Install my Linux System Before Windows?

To save headaches, no. When Linux installs, it recognises other operating systems and allows you to boot to a choice of those on disk. Windows is less usefully inclined. Install Windows first, then Karmic.

### What if I want Karmic as my First Partition?

Good call! In that case, rather than using Ubuntu's Partition Manager to resize and/or segment your disk, download and run GParted from boot. (It's better than anything else I've tried, including Acronis' Disk Director and Partition Magic.) You can resize and even move your Windows' partition, although that can (rarely) lead to you having to reinstall Windows as well.

My advice would be this -

- plan your pie
- back up from existing Windows
- using GParted, format the entire drive and partition as required
- install Windows on the second partition, then Linux on the first

But that's merely an opinion, and there are many others! Google it to gauge what works for you because there is no right nor wrong, just sometimes poor planning or bad luck.

### How Much Space To Allow For Each Partition

Well, for your docs, at least - how long is a piece of string? Then again, so far as Ubuntu is concerned, they say: *"The [operating system] takes between 3-4gB hard drive space, and 8-10gB will be needed to run comfortably."*

That doesn't take into account much in the way of personal documents and media, nor additional software installations, so allow for that on top.

Regarding the Linux SWAP size, the jury is permanently out, but it is generally reckoned you should allow for a separate partition of two to three times your hardware's RAM size. I've got 2gB RAM in this laptop, for example, and 4gB SWAP. Is that naughty? I don't know, but it works.

### Just Give Me a Solution!

I know, for noobs, and even intermediates, this is the hardest bit. That's only because you don't want to mess things up or have to redo. Almost certainly, if you research a bit, you won't mess up, and you won't redo for a good long while. Stay chilled. Have a cup of tea!

Here is a partition suggestion, but merely a suggestion, that allows for Windows (begrudgingly) and backup on a separate disk. It's not ideal, just a basic idea. Like I say, it's a personal thing, and a step that should take you longer to consider than anything else in this guide:-

Partition	gB	File system	Purpose	Notes
1	25	Ext4	Karmic system	
2	30	NTFS	Windows system	Begrudgingly!
3	100	Ext4	/home - docs	
4	50	NTFS	Windows docs	Can be used by Linux
5	4ish	Swap	Swap	Is shared between Linux systems

If you have extra space, divide it between your Windows and Linux docs partitions, or consider adding additional partitions for a rainy day, else those mp3s.

Then, on a separate drive, divide in two:-

1	Big!	Ext4	Linux docs backup
2	Big!	NTFS	Windows data backup

### Allow for Virtual Operating Systems with VirtualBox

One last consideration. In this guide, for those that want to emulate other systems such as Windows or other Linux systems, I'll show you how to add and configure VirtualBox in the imaginatively chapter *Emulate Virtual OSes with VirtualBox*.

In fact, using VirtualBox, you can realistically have a 100% Linux box with a copy of Windows, or whatever system, sitting pretty within.

If you think you may want that option, read that chapter now so you can best prepare for the extra bulk of those operating systems it allows you to virtualize.

For instance, if you'll be wanting a virtual Windows 7, plus another for, say, OpenSUSE, allow for an extra 25GB for each (to include a bunch of programmes plus rattle space) in your /home directory. Then again, these virtual OSes, undeveloped, will be much smaller at around 10GB each. Just be aware and plan ahead for whatever eventualities are likely to affect you and your biz.

# The Karmic Koala Installation Process

---

The setup is quick and easy, with the exception of the Partitioning Manager which, for new users, can confuse. This tutorial helps manage the process. Before you begin, I suggest you read all of this section, with careful consideration to the partitioning notes. That may, quite likely, save you some time and result in a better setup.

Let's crack on ..

Download Karmic Koala's .iso image file here [<http://www.ubuntu.com/getubuntu/download>], whether in 32 or 64 bit. If you don't know how to burn an image to a disk, [read this](#).

(If you've already got, say, Jaunty, just right click the .iso and choose Write to disc .. easy as pie.)

Last call: you have backed up your data, huh? Right, onward and upward.

- Pop that disk into the tray and reboot the machine.
- On rebooting, up pop the installation language options. Choose your setup lingo.
- The Ubuntu CD menu opens. Choose Install Ubuntu. Things start loading up.

Want to Try The Live CD First?

The live CD, as it's called, allows you to get a flavor of Karmic before actually installing, and before making any changes to your PC.

So, from the installation CD menu, click on Try Ubuntu without any change to your computer. It'll load up Ubuntu from the live CD and, as it says, without changing your system. Once loaded, there's a desktop icon offering to Install Ubuntu 9.10. Click that and the installer-proper starts. Now carry on with this checklist, starting at the stage where you choose the installation language.

- Click Forward on the Welcome screen and choose the OS language.
- Choose a timezone, click Forward.
- Choose a keyboard layout, click Forward.
- The partitioner kicks up, then the Prepare Disk Space page opens.

## Partitioner - now that's a scary word

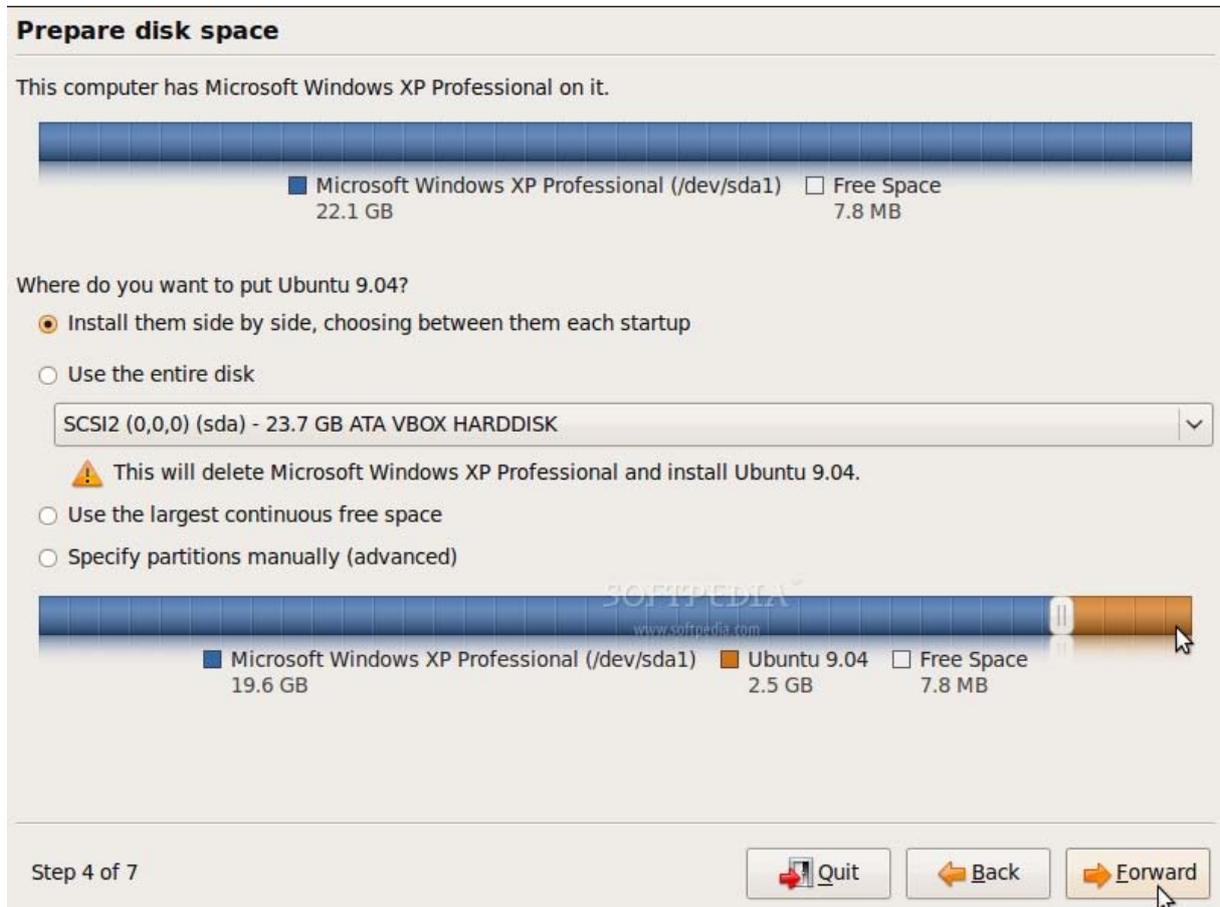
Here's where you divvy up your hard disk/s and, of the installation process, this is where you are most likely scratching your head or, if you have an existing operating system you want to continue to work, you may feel a little concern! Well, we'll just have to get it right then, won't we ;)

You are provided up to three choices, depending on what's already on the disk:-

### **Install them side by side, choosing between them at startup**

You're offered this option if you already have one or more operating system/s on the drive.

Select this and up pops a box labelled Write previous changes to disk and continue and, if you click Yes (DON'T, yet at least), Ubuntu manages a default configuration to preserve existing operating systems while allocating space from their partitions for Karmic. One Ext4 partition is created for Karmic and another, a swap partition, for swap. If you already have a swap partition (for an existing Linux operating system), that will be used also by Karmic and only the Ext4 partition is created.



Personally, I don't like this method because it changes existing partitions automatically and I prefer to do that manually, so I know exactly what is going on. Also, I prefer to set up at least one further partition, for my data - /home, and this option doesn't allow for that.

Then again, it's pretty safe (there is a rare risk of problems with existing operating systems) is faster and is less hassle.

### **Erase and use the entire disk**

Clearly the easiest option. Will wipe the disk bare, creating a small SWAP partition and using the rest for Karmic. Again, it will not create a separate partition for data. Not my choice, again.

### **Specify partitions manually (advanced)**

OK. This is the best of Ubuntu's options. You have control. And you are paying attention, right?!

Check the box, click Forward, and Ubuntu again scans your disk (or disks if you have a multi-disk PC).

The Prepare Disks page opens and you see clearly charted the layout of your disk or disks, together with a partition summary below.

**Prepare partitions**

Device	Type	Mount point	Format?	Size	Used
<b>/dev/sda</b>					
/dev/sda1			<input type="checkbox"/>	20003 MB	unknown
/dev/sda2	swap		<input type="checkbox"/>	1003 MB	unknown
/dev/sda3	ext3	/	<input checked="" type="checkbox"/>	20003 MB	unknown
/dev/sda4	ext3	/home	<input checked="" type="checkbox"/>	38000 MB	unknown
unusable			<input type="checkbox"/>	1011 MB	

Buttons: New partition table, New partition, Edit partition, Delete partition, Undo changes to partitions, Click to zoom out.

Step 4 of 7 | Quit | Back | Forward

Study that chart and partition summary carefully, with your partition plan to hand. What, you don't have a partition plan? We discussed that earlier. Go read the previous chapter and come back here.

Right. You need to take your strategy and compare it with the chart and partition summary on the Prepare Disks page. Basically, you need to consider where on that disk to put what partitions.

Let's say you've got a typical disk, unchanged from factory install, which comprises one big Windows C drive. Simple, you can shrink it from either end and, with all that freed up space, create whatever new partitions you need.

Then again, you may have the C, but with a D - maybe your old Windows data drive - alongside. In that case, you could shrink C from the end nearest D, and shrink D from the end nearest C, creating a gap in the middle and, in there, plop in Karmic.

Alternatively (or as well) you could shrink the far end of the drive, furthest away from your first partition, and have another/some of Karmic's partitions go there. Bear in mind though, just as the innermost part of a wheel spins faster than the outer edge, so the first partition runs faster than the last so, ideally, you'd have your key operating system on the first

partition. The swap can be last, at the slow end of the disk, particularly if you have plenty of RAM.

To add a new partition to your new table, click on free space and then on Add. Up pops a box needing some detail:-

- Select the size to make the slice.
- Use as For Karmic, choose Ext4 for all partitions except for your swap, which requires a swap file system.
- Mount point - What the partition is for. The first available space should be for / (the root of Karmic's system), the next partition for /home (your data), then whatever else you want before the last partition for your swap.

Click OK to reserve the partition. To add further partitions, click on free space again and repeat as before.

- Revert If you make a mistake, go back a step.
- Change To use, click on the partition to change. Up pops a box and you can, for example, change the partition size. You can also change the filesystem, for example, from that of Windows (ntfs, fat32 ..) to that of Linux (Ext4 is best).

### Some More Partitioning Tips

**Partitions for Music and such** - Add as many partitions as you want, leaving the mount point (see below) blank. Karmic reads most filesystems. Ext4 is recommended but, for Windows to read the partition, make it ntfs and then partition can be shared between Karmic and Windows.

**Allowing for Windows** - If you plan to add a Windows system on one of your partitions at a later date, give that an ntfs file system.

**Safeguard /home** - Allocate this to a partition on a secondary drive and it allows for future upgrades.

**Secure backup folder** - This should ideally be on a separate drive.

You get the picture, there are options to consider. The most important one is, did you back up your data, just in case you are somehow unlucky.

Using this advanced manual method and with your mapped out plan to hand, here are the functions at your disposal to create your ideal setup:-

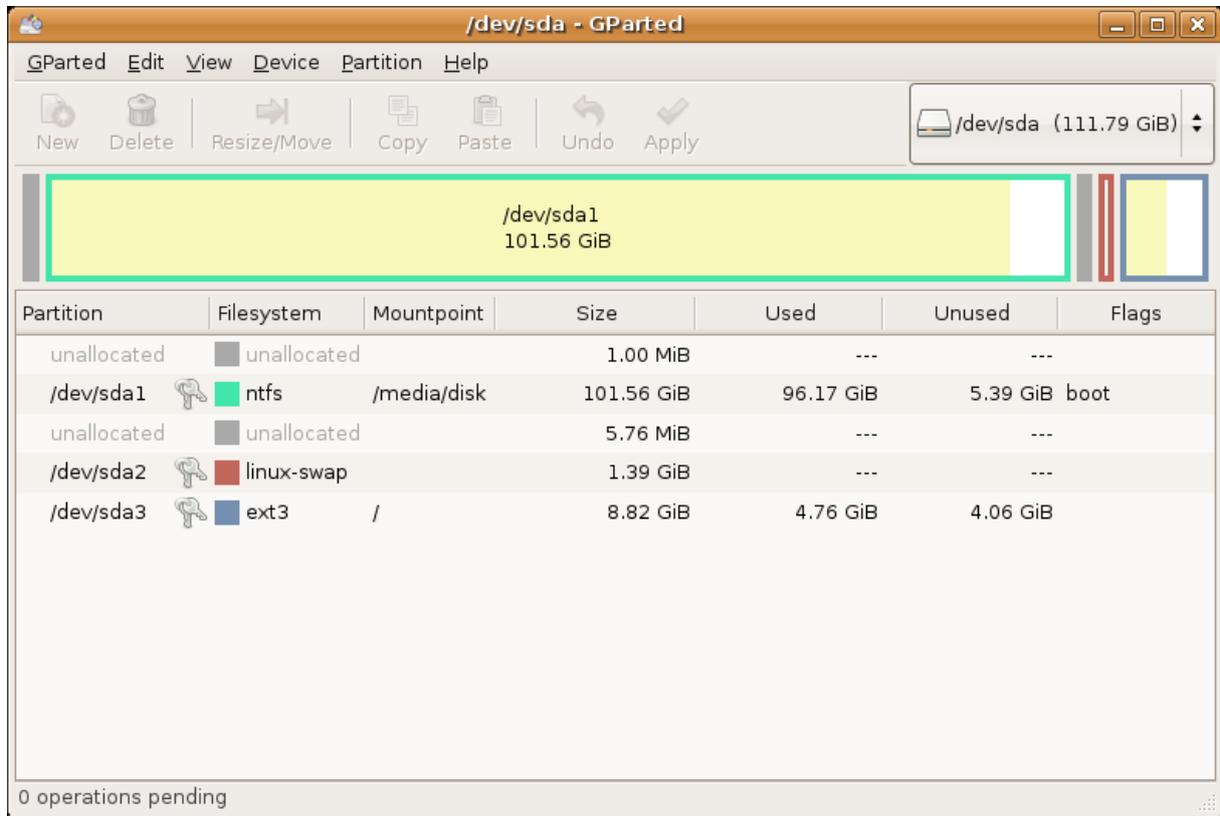
**New partition table** - Deletes your existing partitions and everything in them. Choose this is you want to wipe your disk and build a new partition structure entirely.

### Primary or Logical?

Doesn't matter. For technical reasons you can only have 4 primary partitions. If you want more partitions, just create three primary's and then create the rest as logical.

## Why Not Use gParted?

Why not indeed? I do, but more likely I would do so for a complete disk format and new partition table. But Ubuntu's Partition Manager is basically the same anyway and is more user-friendly.



But sure .. you could set up all your partitions with gParted and then, on installing Ubuntu and coming to the Partition Manager, simply allocate your gParted-created, Karmic-targetted partitions to the new operating system.

## Finalization

Did you manage to get through the partitioner alive? Good, let's finish our Karmic installation.

- With your disk space allocated, click Forward.
- On the Personal Identification screen, add the basic details and click Forward.
- There's an installation summary on the Ready to install screen .. And an Advanced tab. Most importantly, you can add a network proxy if you like.
- Back on the Ready to install screen, click Install.
- Go make a cup of tea.
- Your partitions will be formatted and Ubuntu installed. I guess you knew that.
- When the Installation Complete dialogue box pops up, click Restart now.
- When prompted, remove the disk from the tray and click 'Enter' to reboot.

I've noticed that, at least with the final release candidate installation disks, after this stage the computer can hang (likely it's a lack of empathy between the kernel and my HP laptop). If that happens, just do the technical thing: hold down the power button, force a shutdown and restart. The good news was that was the only problem I had with the installation process.

After reboot, up pops Karmic's shiny new login screen.

# Installing Software

---

As we install many packages from a clean install, let's compare the 4 methods for software installation and removal, 2 of which are new, included by default.

The first two methods, `apt-get` and `aptitude`, are used in conjunction with the terminal. The other two, the Synaptic Package Manager and Karmic's new Software Center are the GUI (graphical user interface) equivalents.

## `apt-get`

An installation/removal method. As well as installing/removing packages, it installs any dependency files, such as relevant libraries, and removes conflicting software.

## `aptitude`

Ditto `apt-get`. Except. When you remove with `apt-get`, it doesn't remember, and so doesn't remove, any dependency files. `Aptitude` remembers your installations, so when you remove something, it removes the dependencies too. There is a proviso to this advantage, and that is that any required dependencies are known by your machine prior to installation. To be safe, before installing with `aptitude`, run a quick "update".

.. So, the long and short of that is, of `apt-get` and `aptitude`, I only ever use `aptitude` which, BTW, is installed by default with Karmic Koala (it had to be manually installed with prior versions). If anyone can tell me why I should ever use `apt-get`, I'm all ears. There are those that say you should use either one or the other. Hmmn, just use `aptitude` then!

Using `aptitude`, for instance:-

- Open Applications > Services > Terminal (if it isn't already open)
- Type `sudo aptitude install [package]` or `sudo aptitude remove [package]`

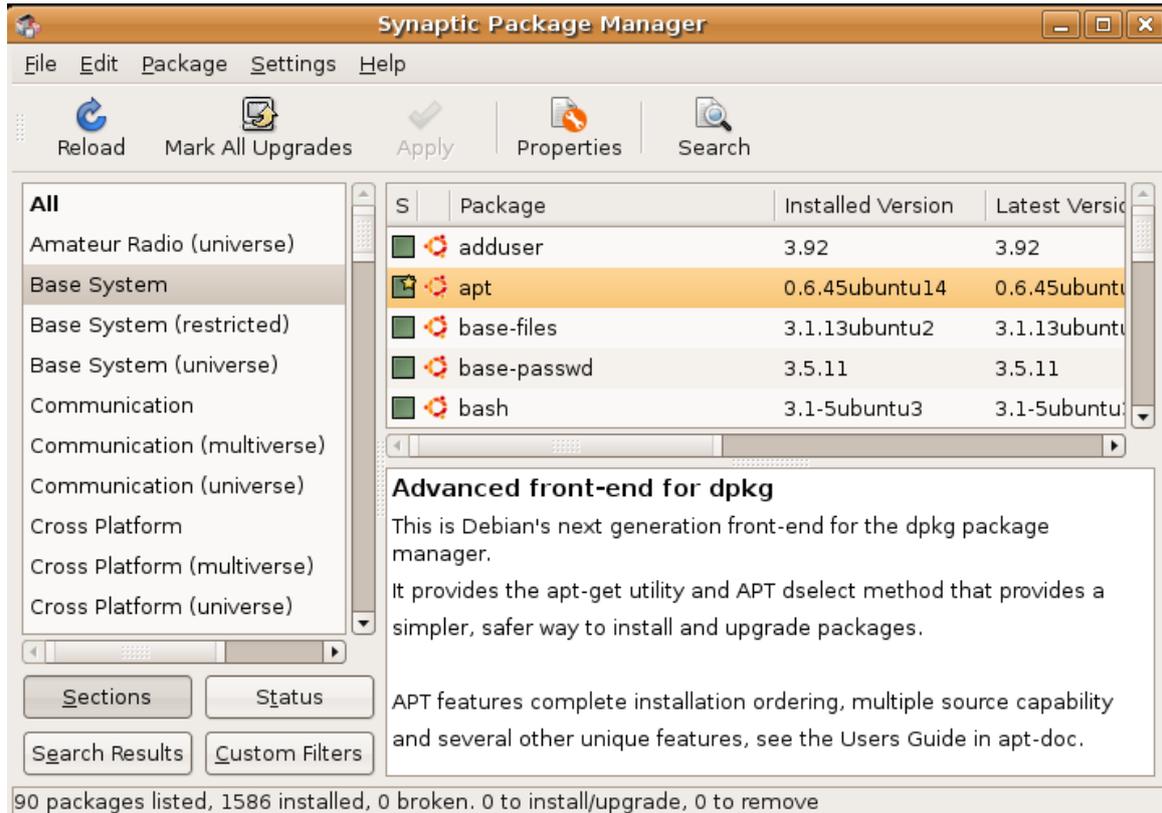
.. and this can be simplified even further, with a one-time edit to the `bashrc` file. Read the next section Terminal Alias Shortcuts with `bashrc` for more on this (and lots lots lots more). But, basically, all I ever type is `install [some package]` or `remove [another]`. In this guide though, I'll use the full syntax except in the `bashrc` section.

## Synaptic

The GUI equivalent of `aptitude` or `apt-get`, and includes other useful tools like the repository manager. I don't use it in this guide for installations. Why? Other than because it does the same thing, here are the steps involved:-

- Open System > Administration > Synaptic Package Manager
- Search for the program or package \*\*\*
- Check the box Mark for Installation
- Click the Apply button

\*\*\* This can be very handy, particularly with the resulting package description.



## Software Center

Essentially the now-deprecated Add/Remove procedure rewrapped for user-friendliness. It's a method not dissimilar to Synaptic. Again, it takes too long. Then again, it's pretty, and I for one like pretty .. but generally I prefer speed!



- 2 -

# Preparing Your System

# A User-Friendly Command Line Shell

This guide & cheatsheet - using simple memorable commands, not complex syntax - will make you not only faster at the Linux shell, but enjoy it too. By editing the `bashrc` file, we can specify synonyms for all possible commands - making them not only easier to remember, but easier to use as well!

Copying over my old `bashrc` file to a new install (it lives in your `/home/username` folder) is the first thing I do because it speeds up and simplifies everything else .. especially for someone with a memory as bad as mine. So what is `bashrc`?

Here's the thing: such is Linux, to make the most of it, we use the terminal a whole lot. Not that you have to - you can get away without, but that's like drinking non-alcoholic beer. Hic.

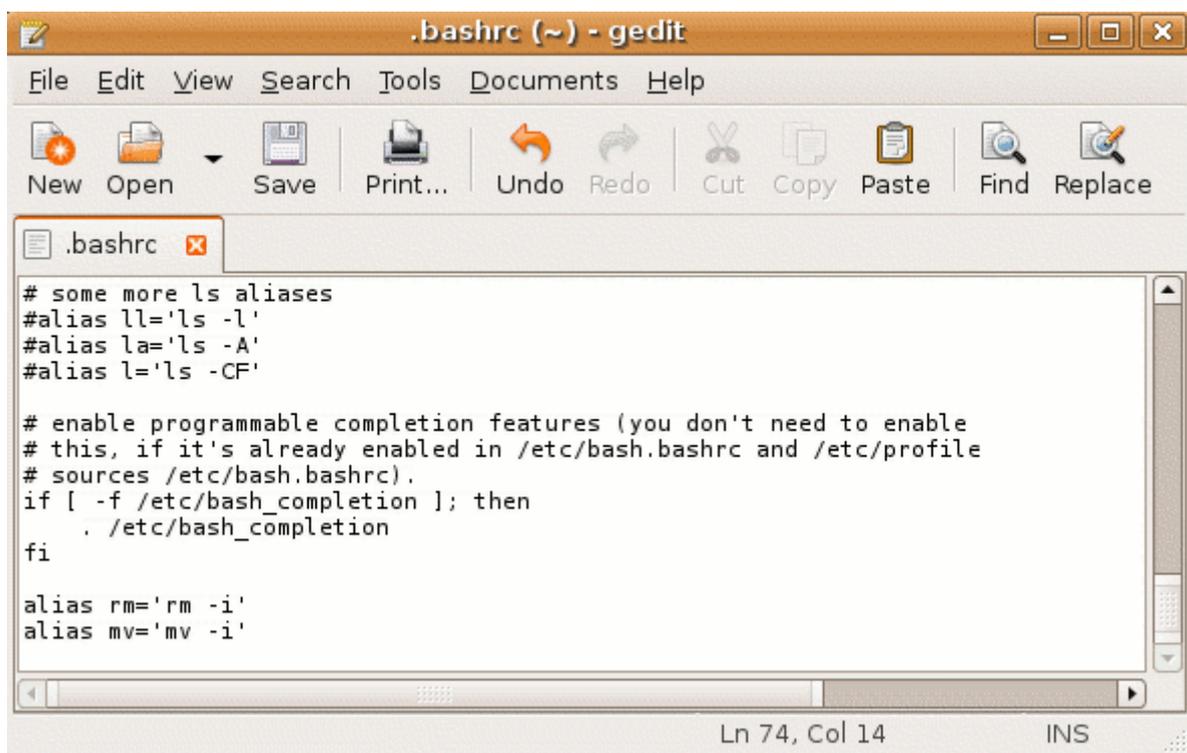
To make the command line experience way faster, less dour, more powerful, even fun, we edit the `bashrc` file.

Open the terminal and enter



.. and prompted, give the password you created at the Ubuntu installation stage, if any.

Scroll to the bottom of the file and paste whatever you fancy from below, modifying the aliases to suit you. I've made comments beside the "####heading" for each section as they appear in my `.bashrc` file, to clue you in.



**###My Most Basic Aliases** .. these ones are useful to everyone

```
#open bashrc
alias ebrc="nano ~/.bashrc"
#update .bashrc
alias ebrcupdate="source ~/.bashrc"
#open software repositories
alias repos="gksudo gedit /etc/apt/sources.list"
#update software source index
alias update="sudo aptitude update"
#Ubuntu version detail
alias ver="cat /etc/lsb-release"
#safe upgrade Linux OS
alias upgrade="sudo aptitude safe-upgrade"
#full upgrade Linux OS
alias fupgrade="sudo aptitude full-upgrade"
#install [software_name]
alias install="sudo aptitude install"
#remove [software_name]
alias remove="sudo aptitude remove"
#RAM and SWAP detail in MBs
alias free="free -m"
#detail list of current dir
alias ll="ls -lha"
```

**###Local Web Server** .. just to give you an idea of the power of bashrc (3 commands in 1)

```
#reload Nginx
alias n2r="sudo /etc/init.d/nginx stop && sleep 2 && sudo /etc/init.d/nginx start"
```

**###Network** .. this example executes a script

```
#mount dirs from a file server (called PETE) as selected in $Pete/etc/exports (an sh file), to
/mnt/PETE/xxx
alias PETE="./PETE.sh"
```

**###Wiki** .. this one backs up a local db

```
#dump someDB
alias someDBdump="sudo mysqldump someDB -uroot -p >
/home/username/www/_dbs/someDB.sql"
```

**###Remote Hosts** .. these play with a remote server

```
#access some remote host
alias remote="ssh -p 1234 12.34.56.78"
#access some folder
alias uploads="cd /some/folder"
```

```
#copy remote db to local
alias dbdumpcp="scp -P 1234
username@12.34.56.78:/home/username/Backup/www/data/someSite/db.sql
/home/username/Backup/data/db.sql"

###SOCKS proxy .. these anonimise my browsing with a single word

# 12.34.56.78
alias proxy1="ssh -p 1234 -D 5678 username@12.34.56.78"
# 87.65.43.21
alias proxy2="ssh -p 8765 -D 4321 username@87.65.43.21"

###Sync to PDA .. well, that'll be a sync then!

#Start FinchSync SVR
#alias sync="java -jar /home/olly/finchsync/finchsync.jar -nogui"
#Stop FinchSync SVR
#alias syncoff="java -jar /home/olly/Apps/FinchSync/finchsync.jar -stopserver"
#Start FinchSync Admin
#alias finchsync="java -jar /home/olly/finchsync/finchsync.jar"

###My Functions .. not a command but a function. Below makes Terminal colorful. Different
colors differentiate machines to help prevent errors. Hmmn, there's only 1 here .. I should
get more into functions!

#add color & formatting to CLI
export PS1="\[\e[35;1m\]\u\[\e[0m\]\[\e[32m\]@\h\[\e[32m\]\w \[\e[33m\]\$ \[\e[0m\]"
```

### So how does it work?

The way these work is pretty self-explanatory but, to break down an example, this one is the shortcut to open this file, `bashrc`, for when we want to add more cool 'cuts:-

```
alias ebrc="nano ~/.bashrc"
```

- `alias ebrc` tells `bashrc` we're issuing an alias directive, and that the alias itself will be "ebrc" (it could be mostly anything you like)
- = well, it's an equal sign, obviously!
- `"nano ~/.bashrc"` is the quoted, properly syntaxed command we would normally provide

So, instead of issuing `nano ~/.bashrc`, now all we need type is `ebrc`.

That won't work though, until we restart `bashrc`, by typing:-



```
source ~/.bashrc
```

As you may have seen, I've even shortcut the command to restart bashrc. Having set an alias to restart bashrc - ebrcupdate - and restarted bashrc one last time with it's regular restart command, source ~/.bashrc), thereafter I type ebrcupdate.

You may imagine, this bash thing is darnedly handy, especially when maneuvering about remote servers where you also have a jazzed up bashrc. If I want to open my SOCKS proxy, for example, depending on where I want to pretend to be, I just type:-

A screenshot of a terminal window titled "Terminal". The window has a standard Ubuntu window header with a minimize button, a maximize button, and a close button. The terminal content shows three lines of text: `proxyUK`, `.. or ..`, and `proxyUS`.

```
Terminal  
  
proxyUK  
  
.. or ..  
  
proxyUS
```

How handy is that? Especially for a bloke like me who, like I say, can barely remember the, er .. can't recall what I was gonna say there.

# Adding Extra Software Repositories

---

Repositories store Ubuntu software packages & libraries online. When you update Ubuntu, or use the previously mentioned app-get and Software Center, there will by default only be looked in a few standard repositories. Here's a guide to them, to using access keys, and my own expanded repository list for you to copy & paste.

When you need some package - maybe a library, an application, whatever - just type in the name, it downloads and installs, together with whatever dependent files are required. Hey, it'll even warn you if there's a conflict with other software, so this is a great, safe system.

There are three ways to add extra repositories:-

- using System > Administration > Synaptic > Settings > Repositories
- by entering command line directives to the repositories file
- by editing directly that file, /etc/apt/sources.list

We'll use the last one. In each case, you need a key to use the repo, so we'll get that too.

## Ubuntu's Official Repository Guides

Worth a read:-

- [Ubuntu Repository Guide](#)
- [Ubuntu Command-line Repository guide](#)

## About My Repository List

Essentially, this list opens up new package choices from Ubuntu Karmic's universe, multiverse, backport and Canonical's partner sources, as well as adding repositories from some of the most useful vendors. Some you may not want to bother with. I've included a line about what some of these things are for, and linked to where you can find out more.

Fact is, some repos are safer than others. Any doubt, Google it. Nonetheless, my choices are widely recognized as being safe. For sure I've had no problems and wouldn't recommend what I don't use. Then again, use them at your own risk.

For noobs out there, let me be specific, you are not downloading anything here, except the key to each repository you want to query and, when you update your records at the end of this exercise, the details of what packages are available from those repos (from which, if you like, you can download applications thereafter.)

## How to Import Repository Keys

Before you can see what's available in a repo, you have to unlock the resource. So, 10 repos? That's 10 keys. Let's get them. Look at the layout of my sources.list file. A typical entry reads:-

```
# Ubuntu Tweak
```

```
# Must-have Ubuntu configuration tool
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 6AF0E1940624A220
deb http://ppa.launchpad.net/tualatrix/ubuntu karmic main
deb-src http://ppa.launchpad.net/tualatrix/ubuntu karmic main
```

Note the line that begins `# sudo apt-key adv`. There is your repository-specific key-request command. So, minus the commenting-out `#`, for each repo you want, paste just that line into your Terminal, like this, hit return and it'll download, unlocking the repo:-



```
view sourceprint

sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 6AF0E1940624A220
```

You can paste a bunch of them in one go, too, pasting something like this:-

```
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 6AF0E1940624A220
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 89GS8GS
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com VSZD7800VZSV788
```

For each, you'll receive back a message saying the key has been imported.

### Editing the `/etc/apt/sources.list` File

Open and edit your repository file:-



```
gksudo gedit /etc/apt/sources.list
```

You can delete its content, or copy that to somewhere else for now if you prefer, (then bin it in a moment anyway.)

Now paste your edited version of my list or, if you like, just copy the lot:-

```
#####
#
# Ubuntu Karmic Koala 9.10 Repositories, from the_guv @ http://guvnr.com
#
#
# Ubuntu Karmic
#
deb http://archive.ubuntu.com/ubuntu karmic main restricted multiverse universe
deb-src http://archive.ubuntu.com/ubuntu karmic main restricted multiverse universe
deb http://archive.ubuntu.com/ubuntu karmic-backports main restricted universe multiverse
deb-src http://archive.ubuntu.com/ubuntu karmic-backports main restricted universe
multiverse
```

```
deb http://archive.ubuntu.com/ubuntu karmic-updates main restricted multiverse universe
deb-src http://archive.ubuntu.com/ubuntu karmic-updates main restricted multiverse universe
deb http://security.ubuntu.com/ubuntu karmic-security main restricted universe multiverse
deb-src http://security.ubuntu.com/ubuntu karmic-security main restricted universe multiverse
deb http://security.ubuntu.com/ubuntu karmic-proposed main restricted universe multiverse
deb-src http://security.ubuntu.com/ubuntu karmic-proposed main restricted universe
multiverse

#
# Canonical Commercial
#

deb http://archive.canonical.com/ubuntu karmic partner
deb-src http://archive.canonical.com/ubuntu karmic partner
deb http://archive.canonical.com/ubuntu karmic-backports partner
deb-src http://archive.canonical.com/ubuntu karmic-backports partner
deb http://archive.canonical.com/ubuntu karmic-updates partner
deb-src http://archive.canonical.com/ubuntu karmic-updates partner
deb http://archive.canonical.com/ubuntu karmic-security partner
deb-src http://archive.canonical.com/ubuntu karmic-security partner
deb http://archive.canonical.com/ubuntu karmic-proposed partner
deb-src http://archive.canonical.com/ubuntu karmic-proposed partner

#
# System Tools
#

# Ubuntu Tweak
# Must-have Ubuntu configuration tool .. http://ubuntu-tweak.com/about
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 6AF0E1940624A220
deb http://ppa.launchpad.net/tualatrix/ubuntu karmic main
deb-src http://ppa.launchpad.net/tualatrix/ubuntu karmic main

#
# Productivity
#

# Gnome-do
# Mac-like desktop apps dock for improved productivity .. http://do.davebsd.com/
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 28A8205077558DD0
deb http://ppa.launchpad.net/do-core/ppa/ubuntu karmic main

# Gnome-Globalmenu
# OS X-style global menu .. http://code.google.com/p/gnome2-globalmenu/
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 7889D725DA6DEEAA
deb http://ppa.launchpad.net/globalmenu-team/ubuntu karmic main
```

```
# Nautilus-dropbox
# File syncing online & across machines, with 2Gb space for free ..
http://www.getdropbox.com/
deb http://linux.getdropbox.com/ubuntu karmic main

#
# Computer Graphics & Themes
#

# Compiz-Fusion
# Improved usability with jazzed up graphics .. http://www.compiz-fusion.org/
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 2ED6BB6042C24D89
deb http://ppa.launchpad.net/compiz/ubuntu karmic main

# Gnome Icon Theme
# Nice desktop graphics .. http://www.gnome-look.org/content/show.php/GNOME-
colors?content=82562
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 2D79F61BE8D31A30
deb http://ppa.launchpad.net/gnome-colors-packagers/ppa/ubuntu karmic main
deb-src http://ppa.launchpad.net/gnome-colors-packagers/ppa/ubuntu karmic main

# Project Bisigi Themes
# Strikingly beautiful Gnome themes .. http://www.bisigi-project.org/?lang=en
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 6E871C4A881574DE
deb http://ppa.launchpad.net/bisigi/ppa/ubuntu karmic main
deb-src http://ppa.launchpad.net/bisigi/ppa/ubuntu karmic main

#
# Web browsers
#

# Chromium Browser
# Open-source Webkit browser, for testing Safari and Chrome .. http://dev.chromium.org/
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 5A9BF3BB4E5E17B5
deb http://ppa.launchpad.net/chromium-daily/ppa/ubuntu karmic main

# Epiphany
# Another Webkit browser, for testing Safari and Chrome ..
http://projects.gnome.org/epiphany/
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 2D9A3C5B
deb http://ppa.launchpad.net/webkit-team/epiphany/ubuntu karmic main
deb-src http://ppa.launchpad.net/webkit-team/epiphany/ubuntu karmic main

# Firefox
# Gecko browser
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 632D16BB0C713DA6
# deb http://ppa.launchpad.net/fta/ppa/ubuntu karmic main
```

```
# This gets latest beta .. for addon conpatibility, add boolean to about:config:
extensions.checkCompatibility
# sudo apt-key adv --keyserver keyserver.ubuntu.com --recv-keys 247510BE
# deb http://ppa.launchpad.net/ubuntu-mozilla-daily/ppa/ubuntu karmic main
# deb http://dl.google.com/linux/deb/ stable non-free

# Opera
# Presto browser
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 033431536A423791
deb http://deb.opera.com/opera/ stable non-free

#
# Communication
#

# Pidgin
# Multi-client instant messenger .. http://www.pidgin.im/
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 7FB8BEE0A1F196A8
deb http://ppa.launchpad.net/pidgin-developers/ppa/ubuntu karmic main

#
# Media
#

# Medibuntu
# Multimedia, entertainment and other distractions .. http://www.medibuntu.org/
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 2EBC26B60C5A2783
deb http://packages.medibuntu.org/ karmic free non-free
deb-src http://packages.medibuntu.org/ karmic free non-free

# VLC Player
# Media player, well decked with codecs .. http://www.videolan.org/vlc/
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com D739676F7613768D
deb http://ppa.launchpad.net/c-korn/vlc/ubuntu karmic main

#
# Extend with Web Development Packages Tools
#

# Drizzle
# Modular relational db optimised for Cloud and Net apps, a MySQL fork ..
https://launchpad.net/drizzle
deb http://ppa.launchpad.net/drizzle-developers/ppa/ubuntu karmic main
deb-src http://ppa.launchpad.net/drizzle-developers/ppa/ubuntu karmic main

#
# Graphics Tools
```

```
#

# Shutter
# Feature-rich screenshot program .. http://shutter-project.org/
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 009ED615
deb http://ppa.launchpad.net/shutter/ppa/ubuntu karmic main
deb-src http://ppa.launchpad.net/shutter/ppa/ubuntu karmic main

#
# Windows/OS Emulators, Translators, Virtualizers, all that
#

# PlayOnLinux
# Run Windows wares and games .. http://www.playonlinux.com/en
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com FC6D7D9D009ED615
deb http://deb.playonlinux.com/ karmic main

# Setup a Virtual OS with Virtualbox (sure beats a dual-boot!)
# Virtualization software for guest OSes .. http://www.virtualbox.org
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com DCF9F87B6DFBCBAE
deb http://download.virtualbox.org/virtualbox/debian karmic non-free

# Wine
# Run Windows apps .. http://www.winehq.org/
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 58403026387EE263
deb http://wine.budgetdedicated.com/apt karmic main

#
# Package Management
#

# Subversion
# Software versioning .. http://subversion.tigris.org/
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 6298AD34413576CB
deb http://ppa.launchpad.net/anders-kaseorg/subversion-1.6/ubuntu karmic main
deb-src http://ppa.launchpad.net/anders-kaseorg/subversion-1.6/ubuntu karmic main

#
# Other Applications
#

# Google
# Picassa, Google Desktop and maybe other stuff .. er, google it!
# sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com A040830F7FAC5991

#####
```

Be sure to save the file once you're done.

## Updating the Repository Records

Type:-



```
sudo aptitude update
```

There will be a bunch of errors because you've not secured the keys for these places.

If you are pushed for time and just want my list in its totality (or even if you don't but don't mind having the odd irrelevant key hanging about in your records), paste this into the terminal as one batch, to save some fiddling about:-

```
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com DCF9F87B6DFBCBAE
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 6AF0E1940624A220
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 2EBC26B60C5A2783
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 28A8205077558DD0
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 2ED6BB6042C24D89
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 2D79F61BE8D31A30
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 6E871C4A881574DE
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 5A9BF3BB4E5E17B5
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 991E6CF92D9A3C5B
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com EF4186FE247510BE
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 7FB8BEE0A1F196A8
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com D739676F7613768D
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 4FEC45DD06899068
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com FC6D7D9D009ED615
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 6298AD34413576CB
```

Now you've unlocked the resource, don't forget to update:-



```
sudo aptitude update
```

Still Getting Errors? Maybe you're getting an error or three, reading something like:-

```
W: GPG error: http://ppa.launchpad.net karmic Release: The following signatures couldn't be
verified because the public key is not available: NO_PUBKEY 4FEC45DD06899068
```

```
W: You may want to run apt-get update to correct these problems
```

The reason you're getting that, is because you haven't imported the key, for whatever reason, but basically because you have been a thoroughly disorganized chap ;)

You can ignore the first line about running apt-get, but in the first line there's a hexadecimal number, in this case '4FEC45DD06899068'.

Remember our key-request command?:-

```
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com SV9D6SVD97967VSD
```

OK, swap that number on the end for the one in the error message, for each of the error messages, inputting them as before in the Terminal or, for this error:-



```
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com 4FEC45DD06899068
```

Then have another go:-

```
sudo aptitude update
```

Later on, we'll see the true power of this repository file when we upgrade our core system and packages, before we start having fun adding our favorite wares for work and play.

# Keeping Your System Up To Date

---

## Upgrading System and Software

Once you have repositories set up and your system updated to reflect what upgrades, patches, packages, software, libraries and so on are available, it's time to safe-upgrade.

Safe-upgrade? Didn't it used to call *upgrade*?

Yes, but with the Karmic advent they've deprecated that command in favor of safe-upgrade. Dunno why. Sounds, er, safer, I suppose. Bloomin' marketing for you.

Upgrading Ubuntu is a bit like running Windows Update (except you're not unwittingly downloading a bunch of spyware, bloatware, control\_freakware, or just generally we\_don't\_care\_about\_bugging\_up\_your\_PC-ware).

And on top of that it's a lot quicker, to the point that you no longer take an enforced vacation while a service pack installs. Type:-



```
sudo aptitude safe-upgrade
```

.. or if you followed our part about Alias Shortcuts with bashrc, you can just type:-

```
upgrade
```

(See, I told you to follow that bit.)

## How to (Full) Upgrade an Old Ubuntu Edition

It won't be possible to upgrade our Ubuntu version yet because, for the next 6 months, Karmic Koala is the latest-greatest. But, with Lairy Limpet, Livid Larry, Ludicrous Loot or whatever comes out next April, you can upgrade to that with the taxing command:-



```
sudo aptitude fupgrade
```

.. betcha can't wait.

At this point, if you're new to Linux, you may be forgiven for allowing just a little bit of resentment to pass through you for all those hours you've spent at Windows Update, not to mention their damn reboot demands. You'll only have to restart Ubuntu if you download a new kernel.

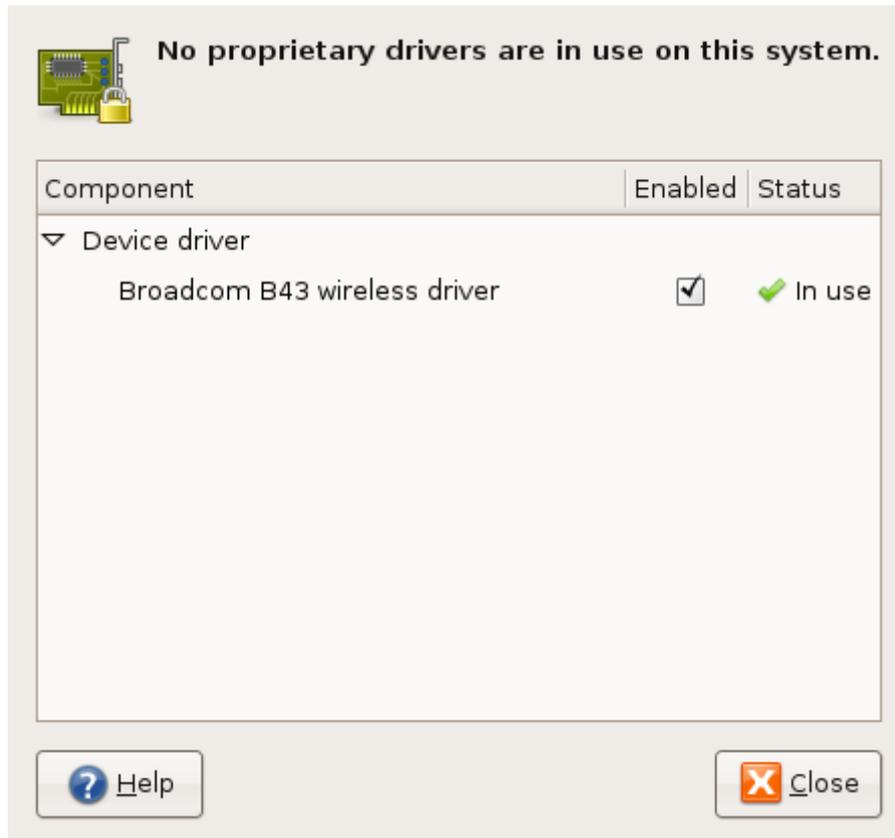
(One other thing, Ubuntans, if you do call 10.04 Lairy Limpet, just cut me credit somewhere)

## Hardware Driver Updates

Here's how to ensure your Ubuntu-driven PC is up-to-date with the latest hardware drivers.

The hardware drivers required varies, of course, from machine to machine. Ubuntu generally works out what driver choices you'll want to know about, to consider installing.

To take a look at what's available for your PC, in the menu:- System > Administration > Hardware Drivers



Listed are any available proprietary drivers. Simply highlight what, if anything, you want, and click the Activate button.

For instance, by default, my wireless wasn't working until I chose the appropriate driver from this list, and I was able to improve the graphical performance as well from one of the choices in this list.

.. But don't get too click-happy here. Check out your options and Google them. I had two choices of WIFI driver, and after a little research, it turned out one was more advanced than the other. Talk about a close call, huh.

# Speeding Up Your Boot and System

## Faster Boot with System Efficiency

For speed freaks out there, let's look at how we may tune the PC to load only those system services that we need, disabling unnecessary ones. Not only does this give a faster boot time but can also shore up potential security risks.

When you install Windows, unless you've got a PC crammed full of resource, one of the first things you would ideally do is to disable all those generally useless services, some of which are only there as legacies from prehistoric versions when Bill was practically poor and wearing those windows-sized glasses. (I hear Windows 7 is better, or at least the spectacles have improved.)

With Ubuntu Karmic, so toned a system it is, there aren't that many services one can disable but, if you really want the barest possible Koala - and everyone likes a Koala bear - saving on startup time a tad, here's how.

### Disabling Services using BUM

Get the friendly GUI application, Ubuntu BootUp Manager or BUM for short (hey, no wise cracks):-



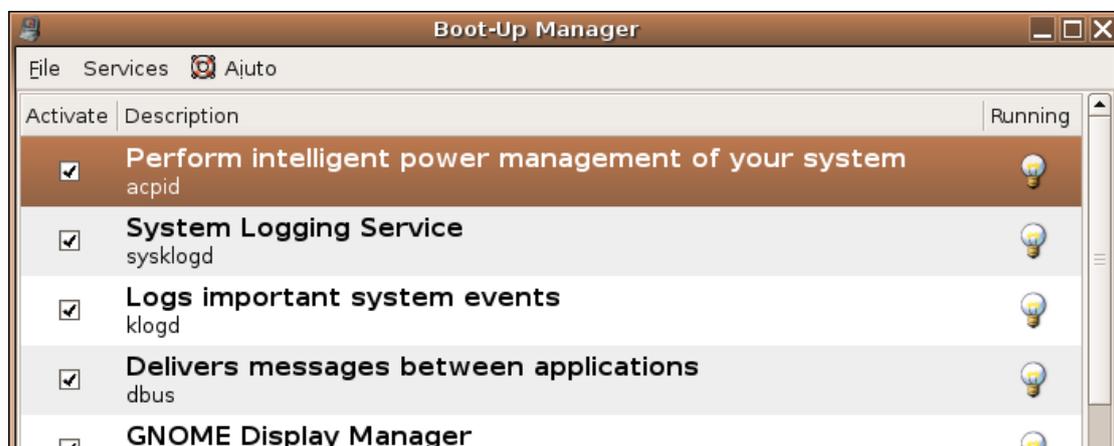
```
sudo aptitude install bum
```

When finished, kick it up. Have to be root for this one:-

```
sudo bum
```

Or alternatively, navigate the menu:- System > Administration > BootUp-Manager

.. either way, after giving your admin password, it'll take a little while to start the first time, while the program scans your system.



One nice feature with BUM is the addition of a human-friendly description to each somewhat cryptic service name, to help identify what you may or may not wish to enable or kill.

To deactivate a service, simply uncheck the box next to the service item.

Otherwise, BUM benefits more advanced users with powerful run level editing functionality. At the bottom of the app's dialogue box, check the Advanced tab and a couple of tabs appear - Services and Startup and Shutdown Scripts: with these you can edit run levels, which basically means you can set whatever services to operate under different system conditions (maybe just for the root administrator, else for everyone, and more .. although run levels are not the point of this tutorial so, er, Google that.)

### Disabling Services using sysv-rc-conf

An alternative method is using sysv-rc-conf, which is essentially the same but that works only from the terminal, and that misses the human-friendly service descriptions.

Download it:-



```
sudo aptitude install sysv-rc-conf
```

And again, you'll need root to fire it up:-

```
sudo sysv-rc-conf
```

### Disabling Services using Command Line Syntax

The quickest way to deactivate services is by running the update-rc.d script from the terminal.

Let's say, for example, that you want to disable cron, the service that schedules tasks:-



```
update-rc.d -f cron remove
```

Like I say, I'm not getting into run levels here, but you can use update-rc.d to alter these too, as well as to start and stop services, and to prioritise them. To find out more, including examples:-

```
man update-rc.d
```

The man prefix can, here and always, be used to call up a manual for a command.

### List of Services to Consider Disabling

Requirements vary, sure, but these are typical suspects to off-load.

Service	Description
apmd	For laptops and/or if you use UPSi

<b>apport</b>	Notifies the ubuntu makers of your PC errors
<b>avahi-daemon</b>	Printer/scanner service
<b>Bluetooth</b>	For using Bluetooth
<b>brltty</b>	Accessibility
<b>cups</b>	Printing
<b>dns-clean</b>	Dial-up modems
<b>hotkey setup</b>	Only for laptops
<b>laptop-mode</b>	
<b>pcmciautils</b>	
<b>ppp-dns</b>	For old ADSL modems
<b>rsync</b>	remove
<b>samba</b>	For a Windows LAN
<b>saned</b>	For scanners
<b>windbind</b>	Works with Samba
<b>wpa-ifupdown</b>	For WIFI
<b>Human-Readable</b>	Descriptions of init Scripts

For a handy list of services, coupled with their user-friendly descriptions, take a look at [this page](#) on the Ubuntu wiki.

## Fine-Tune Your SWAP for Stability

Clearly, the order of the day is to RAM your machine up to the hilt, but enhancing the use of the swap file can also be a benefit. Here's how: using Swappiness.

Why? Because computing can be very RAM-intensive. Say, you are running a graphics editor, a web browser or two, office apps and, who knows, maybe even a video editor.

Check Your Swappiness Value. The lower the value, the longer it takes for swap to kick in. Of a scale of 0-100, the default is 60. Check yours:-



```
cat /proc/sys/vm/swappiness
```

By way of a contradiction, Ubuntu's official swap guide - and if you are reading this you should also read that - recommends a way lower value, of just 10, to allow for quicker swap access. While there is no one-size-fits-all, you should have a play with various swappiness values.

To change the default, open:-



```
gksudo gedit /etc/sysctl.conf
```

Search for "vm.swappiness=60". Change the value to "vm.swappiness=10"

You'll have to reboot before it takes effect.

### vm.swappiness=60 Doesn't Exist

You opened the `sysctl.conf` file and `vm.swappiness` wasn't there? Very well possible.

Just scroll to the bottom of the file and add your swappiness parameter to override the default. So paste "`vm.swappiness=10`", without the quotes.

### Changing Swappiness Value without Reboot

This is handy to try different values without having to reboot each time.

To change the swappiness value for the current session only, or until you change again the value, type:-



```
sudo sysctl vm.swappiness=10
```

.. where you want to try the value of 10, for example.

# Security on Your Linux Box

---

Here's the ideal start to find out about the options available to safeguard your Ubuntu PC & data, using antivirus & firewall softwares, plus iptables.

This section of the Karmic Koala Bible weighs the basic firewall & anti-virus options for sole Linux PCs & network clients. It analyses security concerns, linking to some of the finest reference about IPtables and the overall topic.

(OK, let's be frank .. it's soooooo dull .. but it's also important and if you have any doubt then do skim through it, and I'll try to make it as painless as possible)

Thing is, I can't bring myself to write up a guide like this, where effectively you're putting your business, to whatever extent, in my hands, without a word of caution. Bad Karma!

Yes, Linux is safe, strikes me. Essentially it is, with a system where you as 'root', else a privileged Super User, would have to execute a virus or port-opener, to compromise things.

Then again, you know what? I've done that very thing in my silly-sod past, and who knows what clever hack-tactic may ensnare my inquisitive nature once again. Times change, knowledge develops, viruses evolve and ports may somehow be prised.

There are three trains of thought on this subject:-

- Don't bother, the Linux permissions system is second-to-none, the rest is common sense
- Use a Firewall to secure the ports, and don't 'sudo execute' dodgy files
- Use an anti-virus to help prevent the spread of any Windows-borne viruses to the Windows community, there's a fine fellow

I have sympathy with each. But ..

- Don't bother: Never say never. At least, be aware.
- Firewall: Well, I tend to agree with that. Then again, if you're behind, say, a decent router with a bundled firewall, you're sorted anyhow at no direct resource cost. And then again, again, you've already got Linux' in-built iptables, which is a configurable firewall. So why not just tighten that ruleset?
- Windows anti-virus: If that's to protect the less aware Windows community then, bottom line, I'd say that lot needs to Google up (and for crying out loud stop wasting their wad on Symantic!) If it's to protect your Samba-networked Windows machines, you probably know the deal already. Aren't I mean?

Fact is, different setups require different strategies, and a post such as this cannot provide anything other than a roundup of the options and a few pointers. Talking of which, the following documents are definitely worth a read:-

- [Psychocats' Security on Ubuntu](#)
- [Ubuntu on Anti-Virus](#)
- [Ubuntu Security Thread](#)

Here are some of your options:-

## Configure IPtables

We're a little in the deep end here, to be honest. But like anything, it gets much simpler (just down the page, I promise) so take heart (as well as an aspirin.)

Installed by default, iptables can be tuned to your needs to provide super-strong defence, but the ruleset syntax requires some time to get to grips with. Some reference:-

- Ubuntu kicks us off well with their [iptables how-to](#)
- Scribd presents a [flash animation introduction](#)
- [LinuxHomeNetworking](#) do a great job of making this subject seem like something you actually might consider wanting to read about. OK, very vaguely. Hats off!
- [The Linux 2.4 Packet Filtering how-to](#) provides a solid guide that doesn't, quite, make ones toes curl
- Oskar Andreasson is rightly recognised as a brilliant mind on the subject but his regularly updating [iptables Tutorial](#) is somewhat of a choker to read, and best left 'till some understanding has been built up already. Nonetheless, this is the ultimate iptables guide, hands-down, from a guy that probably eats sudoku for breakfast, (if he didn't invent it, along with quantum, rockets and maybe China.)

## UFW (Uncomplicated Firewall) Bundled with Ubuntu Jaunty

Hmm, let's hit the brakes a little. For the uninitiated, there is a better way!

Not only does that sound appealing, but you've already got it, installed by default. It's just disabled until enacted.

Once enabled, you can input commands from the Terminal to create bespoke rules for the iptables, which as you may have gathered is rather easier than setting out the iptables ruleset directly. To make life even more uncomplicated - in fact pretty darn simple - there's a GUI called GFW that can sit on top, effectively working as an iptables' dummy guide. Coupled with a little reading from above, playing with GFW is a great way to gain fundamental understanding, fast.

I'm not gonna give you all the commands, because Ubuntu already did and these guides are terrific:-

- [UbuntuFirewall](#) gives a general idea with a feature run-down and instructions for basic usage
- [Ubuntu Docs Firewall page](#) expands on that in comprehensive, practically enjoyable detail and yes I realise I sound sad, as well as outlining a variety of alternative firewall solutions
- [The UFW Manual](#) outlines all possible commands, with example usage

And for UFW's graphical user interface, GFW, check out:-

- [GFW - the official site](#)
- [UbuntuGeek's undeniably uncomplicated setup guide](#) (he's always good value.)

GUFW has a download link. Ignore that and, instead, type, imaginatively enough:-



```
sudo aptitude install gufw
```

And run it by typing the uniquely uncomplicated:-

```
gufw
```

Or, if you like, use the utterly uncomplicated menu and browse to System > Configuration > Firewall Configuration



In contrast to uber geek chessmaster Oskar Andreasson's scary iptable doctorate thesis, GUFW running on UFW really is for human beings, or more regular ones anyhow, with barely a whiff of intimidation. And the beauty, of course, is that the ABC knowledge of the one leads to a sincere interest in the geek alphabet soup of the other. Isn't that romantic?

### Firewall with Firestarter

Not dissimilar to UFW, and again with its user-friendly GUI, Firestarter hooks into your pre-existing iptables.

While the tiniest bit more demanding, again Firestarter is pretty easy to use and there's a [mighty simple manual](#) to help. In fact, even if you go another route, but are a newbie and want some kind of iptable security solution, read that manual because it really is the Sesame Street of iptables.

To install it:-



```
sudo aptitude install firestarter
```

And to run its wizard:-



```
sudo firestarter
```

When you're done configuring the wizard, a console will open and you can play with that too, for instance to start or stop the thing or see what ports are open.

When you quit the Firestarter console and the panel icon disappears, it's firewall remains up, unseen. Even if you specifically stop the Firestarter firewall which, having configured and started it, you have to do from within the console or from the command line, you still have your iptables to protect you.

### Anti-virus Protection

If you share via a Samba network, and think your colleagues may, shall we say, be a little Windozed (yeah, let's face it, I mean, er, not entirely savvy), this option may prove valuable.

Look up [AVG for Linux](#), for one. And [ClamAV](#) is popular with Ubuntans as well (even if it does sound like an STD.) To install it:-



```
sudo nano /etc/apt/sources.list
```

.. and add the repository:-

```
deb http://ppa.launchpad.net/ubuntu-clamav/ppa/ubuntu karmic main
```

.. save that file, then add this key:-

```
sudo apt-key adv --recv-keys --keyserver keyserver.ubuntu.com  
0xf80220d0e695a455e651ac4d8ab767895adc2037
```

Lastly, get it installed:-

```
sudo aptitude update && sudo aptitude upgrade
```

And that really is quite enough about that. I mean, God's teeth! Are you still reading this? Well, I say, your stamina is estimable. Personally, I was asleep at the wheel.

Then again, I hope that's handy, not off-putting.

- 3 -

## Cool Tips and Tricks

# Mount Your Partitions Permanently

---

Here's how to stop password requests every time you need to mount media. Automate access of any media: partitions, internal/external drives, etc.

One problem with having separate partitions or hard drives - for example for your backup, music collection or website development - is that, every time you boot up, you have to mount those when required, providing a password.

The time-saving solution is to mount such media permanently.

There are two steps in this process. Firstly to tell Karmic Koala where to find the mount if it's not one of the system's automatically recognised partitions and where you want it mounted. Secondly, to create the folder within Koala's recognised file structure to house the mounted media. When set up, for example, your backup folder on a secondary disk can be accessed from within your `/home/username` folder. Handy, huh?

## Tell Karmic Mount & Local Associated Folder Locations

Open the file that controls your mounts:-



```
sudo nano /etc/fstab
```

At the bottom of the file, for each partition or drive you wish to mount forever, paste:-

```
/dev/sdb1 /mnt/backupBox ext3 users,noatime,auto,rw,nodev,exec,nosuid 0 0
```

So what's what? It's not that difficult, really. Below is a simple explanation of the lingo. Read *man mount* for more details, or Google it.

- `/dev/sdb1` - media to mount
- `/mnt/backupBox` - location to mount to with a friendly name
- `ext3` - filesystem
- `users` - allow all users, alternatively use `user`
- `noatime` - don't waste resources recording last access time or, if you want this info, change to `atime`
- `auto` - mount on boot, alternatively `noauto` allows you to mount when needed
- `rw` - read write access, alternatively `ro` would be read only
- `nodev` - prevents unauthorized device mounts
- `exec` - execute programmes from disk, alternatively `noexec` prohibits this
- `nosuid` - do not allow set-user-identifier
- `0` - dunno, probably should though
- `0` - ditto

Save the file when you're done.

## Create the Local Folder to House Mounted Media

Now create the folder location for the mount. So, in this example:-



```
Terminal  
sudo mkdir /mnt/backupBox
```

Reboot.

In Nautilus (the Ubuntu equivalent of Windows Explorer and Finder), look for `/mnt/backupBox`. You can create a launcher for easier access if needed.

Two Handy Commands when Planning Media to Mount

- `df -h` to report file system disk space usage
- `sudo fdisk -l` to list recognized partition tables

## Symbolic Link to Permanent Mounted Partition

Here's an optional third step.

Rather than having to navigate each time to your `/mnt` folder to find your media, you can shortcut to there from, say, your `/home/username` folder. An easy way to do this is to open nautilus twice, once navigating to your `/mnt` folder and, with the other, to your `/home` folder.

Now, holding down the Ctrl and Shift keys, simply drag the newly mounted media file across to your `/home/username` folder which you can see in your `/home` folder. From now on, when you navigate to your `/home/username` folder, click on the symlink and the contents of the mounted partition are revealed right there, as though they resided directly in your home directory. But beware, this is not like a shortcut in windows; files and folders contained in a symbolically linked destination behave as though they were wherever you have created the link so, say you delete a file from a symlink in your `/home/username` folder, you really really do delete the original file.

Alternatively, if you prefer to use syntax to create the symbolic link, here's the deal:-



```
Terminal  
ln -s <destination> <linkname>
```

So, for this example:-

```
ln -s /mnt/backupBox /home/username/backup
```

.. where the first destination is the folder to link to, and the second the place to add the link, with its new name, in this case, being 'backup'.

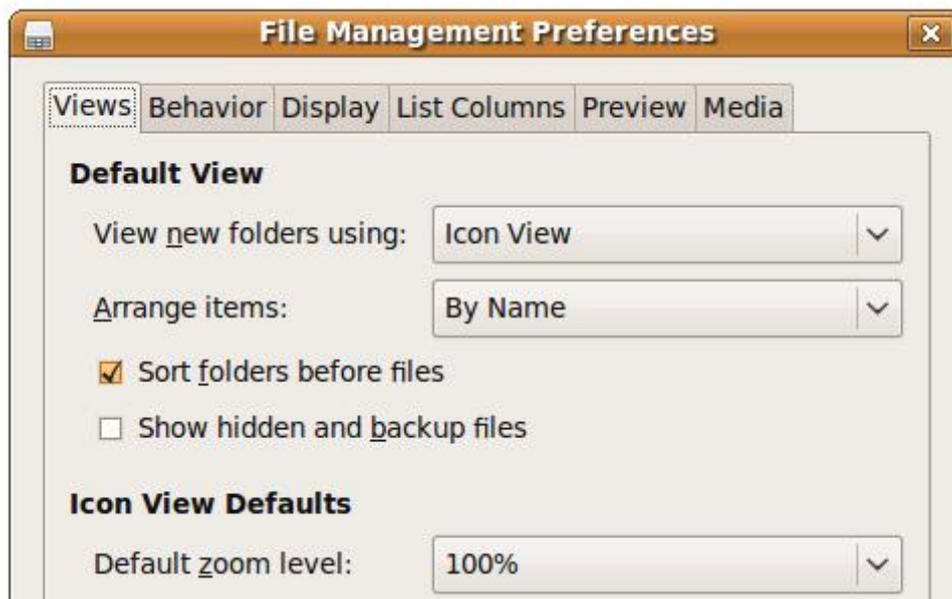
## Get the Most from Nautilus File Manager

---

Here are some simple tips to tweak Nautilus - Ubuntu's file explorer - or at least to introduce some of the options. For some they are pretty obvious, but for newbies they are well worth a peek.

This is a personal thing, not necessary at all! Then again, if you're a tweak freak, like me, and like your file management 'just so', this helps productivity.

Open a folder, under the Places menu, and then:- Edit > Preferences



On the Views tab:-

- elect to View new folders using List View, to see more details
- check to Show hidden and backup files

On the Behavior tab:-

- check Single click to open items (why waste 2 clicks when you can use 1?)
- uncheck Ask before emptying the Trash or deleting files

On the List Columns:-

- check to add Group, Owner & Permissions

There are other handy options, especially for Media, if that's important to you. Have a look around.

If you want even more from Nautilus, you should check the software guide later on in this eBook. Scroll down to the section on Nautilus for about a dozen cracking enhancements.

# Create Bespoke Keyboard Actions

Here are some fast access tips, showing how to make time with keystroke shortcut combinations to open quickly anything you need on a regular basis.

Maybe you open and close some application, like Nautilus or the terminal, regularly, or maybe you need to type frequently some special character .. What a palaver! Not any more.

These two tweaks are handy for:-

- opening files, folders or applications on the fly
- personalizing keyboard functionality

## Manipulate Default Shortcut Settings

Go to *System > Preferences > Keyboard shortcuts*

Browse the list and it's all pretty self-explanatory.



I like to add the shortcut Ctrl+Alt+T to run a new terminal, for instance, and Ctrl+Alt+N to open Nautilus with my /home/username folder.

Alternatively or as well, you can play with more custom shortcuts using the enhanced graphics manager, CompizConfig Settings Manager. Thing is, I've never done that, so sorry I can't tell you how! Lemme know someone.

## Manipulate Keyboard Settings

Go to *System > Preferences > Keyboard > Layouts > Layout options*

For example, I add the Euro sign by choosing, cleverly enough, Adding Euro sign to certain keys, then choosing E. Then I can print the symbol by typing Alt Gr+E.

## Mapping the Windows Key as a Modifier

So you've got Linux Ubuntu and wonder how to have that Windows key do something useful, or just do anything. Here's how to set it up.

Let's make that Windows key do something useful, (other than just openly advertising the fact that Microsoft operates a cartel and we're all pretty much obliged to bow to that.)

Open this file, else it'll create if never before used:-



```
sudo nano /home/USERNAME/.xstartup
```

In there, paste:-

```
xmodmap -e "keycode 115 = Super_L"  
xmodmap -e "add mod4 = Super_L"
```

Now go here to *System > Preferences > Keyboard shortcuts*

Choose whatever tasks you want to assign to a Windows key+something combination, click on the current shortcut, if any, and press your preferred combo.

For instance, I use Wins+R to show the panel's run application dialogue box and Win+S to initiate a search.

If you have any problems, try adding this line to the .xstartup file:-

```
xmodmap -e "remove mod4 = F13"
```

The shortcut possibilities with this key are almost endless; the sky is the limit.

# Kill the System Beep

---

Here's how to stop that ruddy system beep every time the computer boots up.

As it happens, there are several solutions for Ubuntu users, depending on your setup, so I'll list the lot and at least one should work for your PC.

First up, navigate to System > Preferences > Sound, and uncheck "*Play alert sounds*"

You can try a reboot now. But disabling the PC speaker, in favor of using external speakers, can be more tricky.

Try by opening:-



```
sudo nano /etc/modprobe.d/blacklist.conf
```

.. and appending the lines:-

```
blacklist pcspkr  
blacklist snd_pcsp
```

And reboot your Ubuntu PC when finished.

If that doesn't cut it, open:-



```
sudo nano /etc/modprobe.d/alsa-base.conf
```

.. and add the lines:-

```
blacklist pcspkr  
blacklist snd_pcsp
```

Reboot the box again.

And if that doesn't work, as it didn't for me and you won't be messed with anymore, try opening the PC case and ripping out the bloody speaker wires. (I guarantee the last solution works :P )

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# Superb Software List

For Work And Play

This package resource list has the best Karmic-compliant software, by category, for work or play. Fonts, multimedia codecs, system tools, you name it.

With our repositories nicely set up, we're set to install some nice software.

This works pretty much as before, with Jaunty. The only change I've found is that, for those packages not from repositories but downloaded from the software providers themselves, instead of these downloading to /home/USERNAME/Desktop, they download to /home/USERNAME/Downloads. So hey, that figures.

You won't want all this - and neither do I, by a long chalk - but hopefully these choice picks give an idea or three.

I'll keep this list updated, so drop by every now and then to check. And, hey, lemme know your suggestions. What have I missed or, of what's here, what shouldn't be?

### Essential Packages

It can be hard to get by without these. Note I recommend the official Java environment, for maximum compatibility.

Software	Description	Installation	Location
<b>Java Runtime Environment (JRE)</b>	Many applications depend on this key framework.	sudo aptitude install sun-java6-jre sun-java6-plugin sun-java6-fonts	to test type java -version
<b>Adobe Air</b>	This Java-based platform is needed for running many rich internet applications, like TweetDeck.	<b>32-bit</b> Download <a href="#">here</a> . Type:- cd /home/USERNAME/Downloads chmod +x AdobeAIRInstaller.bin sudo ./AdobeAIRInstaller.bin Follow installer prompts.  <b>64-bit</b> Follow <a href="#">this guide</a> , observing "John's comment".	Applications > Accessories > Adobe Air Application Installer

### System & Security Tools

Useful system tools.

Software	Description	Installation	Location
<b>Ubuntu Tweak</b>	Configure Ubuntu to your heart's content, using just the one tool.	sudo aptitude install ubuntu-tweak	Applications > System Tools > Ubuntu Tweak
<b>Gtkorphan</b>	Find and delete unused dependencies. Gtkorphan is the GUI for deborphan which, when installed, does the same thing from the command line.	sudo aptitude install gtkorphan	sudo gtkorphan
<b>UFW</b>	The iptables manager UFW (Uncomplicated Firewall) is a default Jaunty install. GUFW is its handy GUI. I cover this, and the wider topic, in the section Hack-Proofing Ubuntu.	sudo aptitude install gufw	System > Administration > Firewall Preferences
<b>Clam AntiVirus</b>	Anti-virus with GUI, featuring email attachment scanning, a scalable multi-threaded daemon and a tool for auto updates.	sudo aptitude install clamtk	Applications > System Tools > Virus Scanner
<b>Clam AntiVirus (non-GUI)</b>	The command line equivalent.	sudo aptitude install clamav	

## Productivity Tools

Speed up common tasks with some of these applications. There are also quite a lot nautilus tweaks here.

Software	Description	Installation	Location
<b>Gnome Do</b>	Mac-like desktop app-icons dock, with search and other productivity tools.	sudo aptitude install gnome-do	Application > Accessories > Gnome Do
<b>Nautilus-Dropbox</b>	Right click on item in Nautilus, using the <a href="#">Dropbox</a> secure backup, sync and sharing services with 2Gb free space.	sudo aptitude install nautilus-dropbox	right click in Nautilus
<b>Globalmenu</b>	An OS X-style global menu alternative. Quite cool, esp if you went with Linux because you couldn't afford the Mac.	sudo aptitude install gnome-globalmenu	
<b>Nautilus Bundled Extras</b>	Make the Nautilus explorer more powerful and personalised.		
<b>nautilus-actions</b>	Configure programs to launch.	sudo aptitude install nautilus-actions	right click in Nautilus
<b>nautilus-cd-burner</b>	Drag/drop files to burn to CD or DVD.	sudo aptitude install nautilus-cd-burner	right click in Nautilus
<b>nautilus-clamscan</b>	Adds a "Scan for viruses" item to the right-click menu.	sudo aptitude install nautilus-clamscan	right click in Nautilus
<b>nautilus-gksu</b>	Grant Super User privileges within Nautilus.	sudo aptitude install nautilus-gksu	right click in Nautilus
<b>nautilus-image-converter</b>	Mass-resize or rotate images.	sudo aptitude install nautilus-image-converter	right click in Nautilus
<b>nautilus-open-Terminal</b>	Open a terminal in arbitrary local folders.	sudo aptitude install nautilus-open-Terminal	right click in Nautilus
<b>nautilus-script-audio-convert</b>	Convert audio formats on the fly.	sudo aptitude install nautilus-script-audio-convert	right click in Nautilus
<b>nautilus-script-collection-svn</b>	Execute Subversion commands on selected files.	sudo aptitude install nautilus-script-collection-svn	right click in Nautilus
<b>nautilus-wallpaper</b>	Set your desktop wallpaper from the context menu.	sudo aptitude install nautilus-wallpaper	right click in Nautilus

Or if you just want all the Nautilus Bundled Extras:- `sudo aptitude install nautilus-actions nautilus-cd-burner nautilus-clamscan nautilus-gksu nautilus-image-converter nautilus-open-Terminal nautilus-script-audio-convert nautilus-script-collection-svn nautilus-wallpaper`

## Graphic Effects

You can already implement some striking effects (if your graphics card is up to the task) - System > Preferences > Appearance > Visual Effects > check Extra and reboot. Want more?

Software	Description	Installation	Location
<b>Simple CCSM</b>	This GUI 'effects manager' customises what Ubuntu has under the hood. Not only are the effects rather splendid, their functionality aids productivity.	sudo aptitude install simple-ccsm	System > Preferences > Simple CompizConfig Settings Manager

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