All Your Multimedia Support Are Belong To Us

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Of all the Linux distributions you could possibly choose from, Ubuntu is definitely one of those that are ready to use right after installation. As the idiom goes, it "just works". And mostly that's true; after you install Ubuntu and reboot, you'll have an attractive desktop, all the usual must-have apps, and easy access to more. Would that all computer operating systems be so simple!

Ubuntu, and Linux in general, wants that to be everyone's experience all of the time. That's what an open platform with available source code is all about: it puts the user first and makes the software serve the user's needs, instead of impeding them. However, that's not always possible since some things are surrounded in a quagmire of legal clauses, pending patent policies, and the dreaded End User License Agreements that no one ever reads. The most common victim here is multimedia.

The Usual Suspects

You may not remember it or be aware of it, but historically MP3 files were a controversial subject. Record labels just wouldn't accept that their artists could ever release songs as MP3 files. Now, of course, downloadable distribution of music is as common as CDs, if not moreso, and MP3 is so common that many people forget that it's actually a file format (actually a codec) that is owned, part and parcel, by a few corporations that expect payment from anyone distributing the software libraries that will decode MP3 files.

Not all Linux distributions have this luxury, but if you're using Ubuntu then that licensing fee is paid in full for you. You can easily install MP3 support either at install time, or after the fact.

The easiest way to install MP3 support is through the Ubuntu Restricted Extras package, available from the Ubuntu Software Center. To reach the Ubuntu Software Center, click its icon in the Launcher on the left of your screen, or search for it by clicking on the Ubuntu logo in the upper left corner.

Once the Software Center has launched, do a search for "Ubuntu Restricted" and double-click the sole search result. You won't get much information on the package yet because it requires your explicit permission to access the "Multiverse" – Ubuntu's fanciful name for third-party software. Click the *Use This Source* button to allow Software Center to access this resource.

Now dust off some of those MP3 files and give them a listen. The music application in Ubuntu is Rhythmbox. It's an easy-to-use application, so just launch it and double-click your favourite tune. MP3 playback!

M4A, M4V, WMV, Quicktime, and More

In an effort to get away from the licensing fees of MP3 files, many companies have started to favour AAC encoding in an MPEG4 file container. In many ways, it was a case of leaping out of the frying pan and into the fire, because AAC is also a
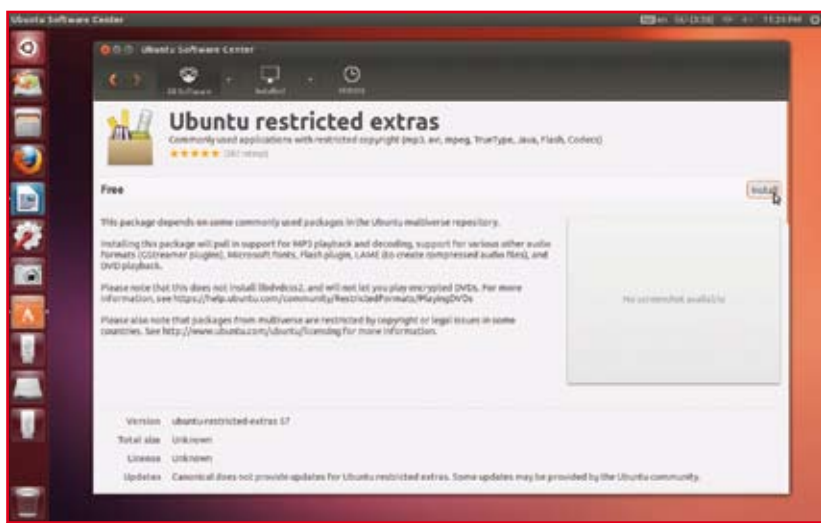

Figure 1. *Install the Ubuntu restricted extras package and get all the support you'll ever need. Well, mostly*

format that comes with many restrictions. Similarly, there are dozens of other formats out there that have been either reverse-engineered or ported for playback on Ubuntu, such as Quicktime and MPEG2 and Windows Media, and more.

All of these issues can be solved with Ubuntu Restricted Extras, or you can cherrypick based on your individual needs by searching for *Gstreamer* in Ubuntu Software Center.

Adobe Flash

The Internet is slowly (but surely) purging itself of that old clunky albatross that is Adobe Flash, and yet you do find it hanging around on for dear life on some websites, or for some older videos on video sharing sites, and online games.

If you've already installed the Ubuntu Restricted Extras package, you've also installed the Adobe Flash Player plugin. But if you don't want to install Ubuntu Restricted Extras for whatever reason, you can search for "Adobe Flash" in the Ubuntu Software Center. As an alternative to Flash on You Tube, be sure to visit *http://youtube.com/html5* so that when an HTML5 version of a video is available, you'll be able to watch that without calling on Flash.

DVD Playback

Movies are big business, and accordingly the movie industry goes a little overboard in their attempts to limit who can see DVDs of big budget movies. You may have paid for a DVD copy of your favourite film, but you aren't actually purchasing the *ability* to view it. For that, you are expected to pay a licensing fee to decrypt the DVD's Content Scramble System (CSS). Normally a computer or standalone DVD player has already paid the fees associated with decrypting CSS so you never have to worry about it, but there's no one around to pick up that tab for you on a free operating system.

If you live in an area that disallows you from decrypting CSS for fear of copyright violation, you can purchase a fully licensed decryption key from Fluendo at *http://www.fluendo.com/shop/product/fluendo-dvd-player/*

If you live in an area that allows you to decrypt CSS of DVDs that you have purchased or rented, then the free option would be to install libdvdcss, a library that has reverse-engineered descrambling CSS so that any software, such as Videos, Totem, or VLC, can play your movies back.

To install libdvdcss, you first must install libdvdread4. If you've installed the Ubuntu Restricted Extras package then this has already been installed for you. Otherwise, open the Ubuntu Software Center and search for "libdvdread4" and install it.

Once libdvdread4 has been successfully installed, you must enter a command into a Linux shell (Terminal) so that libdvdcss can be downloaded and installed for you.

Open a Terminal by clicking on the Ubuntu logo in the upper left corner of your screen and searching for "Terminal". Enter this simple command:

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sudo      /usr/share/doc/    ↵
   libdvdread4/install-css.sh
```

Insert a DVD and open it in the *Videos* application and watch the movies that you rightfully purchased or rented. Strange that you should have to hack the discs you already paid for, isn't it?

DVD Menus are another strange breed; they're overly-complex technically and often incorrectly assume you'll be using a physical DVD remote control to access them. Fortunately, most menus are unnecessary; DVDs can play just fine without ever going to a menu since they have tracks which you can navigate just as you would CD tracks. Most menus will work fine but sometimes software players on any platform will have trouble interpreting a DVD menu correctly. If you find such a DVD, just use the player's controls to go directly to a track on the DVD, skipping over the menus entirely.

Choose Your Player

There are a lot of different kinds of filetypes out there, and chances are you have about 4 dozen of them on your computer. Luckily, you probably only use 20 or so on a daily basis, but broadly speaking there really are only a few different types of files we deal with; we listen to music, watch videos, we open documents that are associated with specific applications, and so on. Now imagine if every different filetype that contained a video or music file opened up in a different application. You'd have to learn 8 different video players just to watch your favourite web series!

Ubuntu mitigates this effectively by including one video player called, simply, Videos. It includes one music player called Rhythmbox. There is one browser. One PDF reader. And so on.

However, the reality is that there are a lot of very good free applications in the Ubuntu Software Center, and you're going to want to try at least a few of them, even when many of them will do, essentially, the same thing that a pre-installed app does. You'll notice as you do try out new ap-
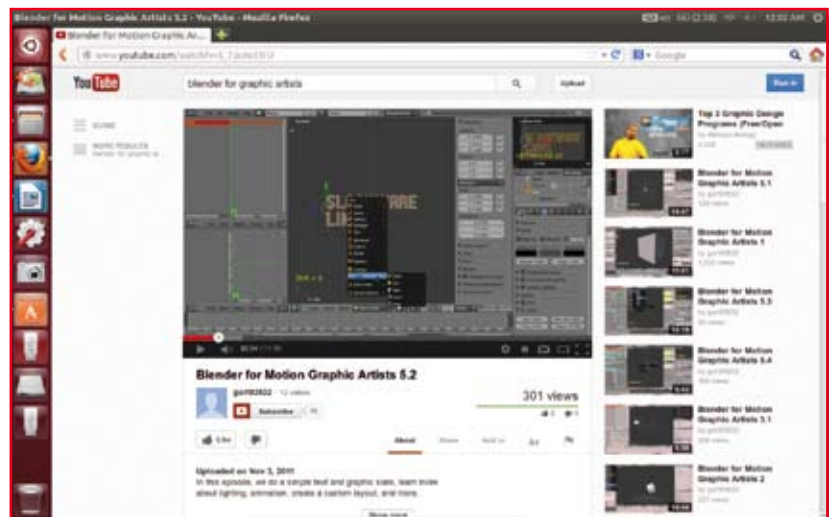

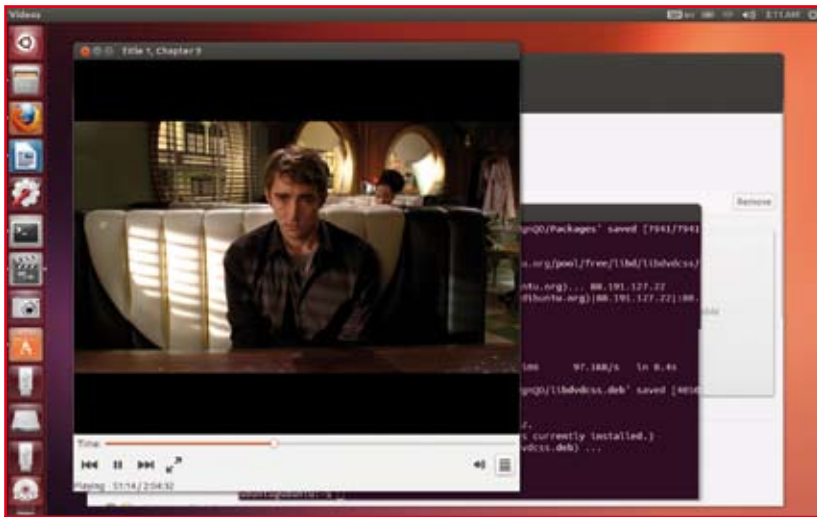**Figure 2.** *Flash playback with Adobe's Flash Player plugin for Linux*

Figure 3. *A store-bought DVD of "Pushing Daisies" is brought to life on Ubuntu!*

plications that some might assume that you want *it* to handle a certain filetype. For instance, all of your MP3 files might open in Rhythmbox, while your OGG files open in Audacity, but your M4A files open in VLC.

As always in Linux, you are in control, so if you want to step in and tell your system what you really want from it, it's easy to do so.

There are two ways to dictate to your Ubuntu computer what you want its default applications to be. You can start with the broad strokes; go to *System Settings* by clicking its icon on the launcher, or by clicking the Ubuntu logo in the top left and searching for "Settings". In *System Settings*, double-click the *Details* icon. In the *Details* panel, select *Default Applications* in the left column. In the right column, set which application should handle the different categories of filetypes; one for web links, one for email, one for calendar events, a music player, a video player, and a photo viewer. It's as simple as that.

If you want or require fine-grain control, you can define what application will open a certain filetype on a file-by-file basis. When you come across a file that you need to have opened in a different application than your current default, right-click on it and select *Properties* from the contextual menu.

In the *Properties* window that appears, click over to the *Open With* tab. This tab allows you to choose from any application installed on

your system that you'd like to have open that file and any file with the same file extension.

Ripping Media

Let's face it, sometimes toting around a bunch of DVDs and CDs is just too much trouble, moreso when one acknowledges that it's all digital anyway. Transferring media from DVD or CD to your computer isn't difficult but it can be made troublesome by two factors:

- Media size; sometimes the files on portable discs take up a lot of space, and while hard-drive space is cheap, the file sizes do start to add up.
- DRM, otherwise known as "digital restrictions management" makes sure that you cannot copy content from discs to your computer, even though you paid for it.

Fortunately, there are usually ways around both of these issues.

Handbrake

By far the most powerful DVD ripper out there is Handbrake. Handbrake allows you to rip media from DVDs so that you can store the movies as (further) compressed files. It's easy to install from the Software Center, and very intuitive. It also happens to have a whole collection of pre-sets that make it easy for a novice user to choose the best combination of quality and file

size. In order for Handbrake to work properly, be sure you have installed the Ubuntu Restricted package, which contains the necessary decryption library so that commercially scrambled DVDs can be ripped.

After you install Handbrake, launch it from the left launch bar or search for it in your *Applications* screen. In the Handbrake window, the first step is to point Handbrake to the media source, or in other words, the DVD in your disc drive that you want to rip. Next, choose a pre-set from the list on the right.

The list of pre-sets are mostly intended for quick and easy templates that will render movies playable on particularly picky portable devices. If your goal actually is to rip movies for your portable device, then choose accordingly, but if you are just ripping so that you don't have to keep the physical discs on hand at all times, then just use the list as a guide. Obviously a movie ripped and compressed for an 8-inch tablet is going to be of a higher quality once blown up to fullscreen on your laptop screen than a movie compressed for a 4-inch smart phone screen. The other hand, it's also going to take up more space on your harddrive.

There is no right or wrong answer to the question of which pre-set you should choose; it's entirely a matter of personal preference. Any of the formats that Handbrake offers will play on your Ubuntu machine, so don't worry about compatibility. If you're more interested in using free and open formats, however, choose the Xvid codec in a Matroska (mkv) container.

Whichever you choose, Handbrake requires a lot of time to rip and compress a movie, so be prepared for you computer to do some serious computing. Definitely don't rip movies on your laptop while on battery power (unless you don't mind draining your battery *fast*).

When it's finished, though, you'll have a self-contained movie file that you can play any time you like, whether or not you have the disc on hand! For extra credit, why not try your hand at setting up an Ubuntu-based XBMC media server, so you can stream your movie files from anywhere in your house?

Sound Juicer

Ripping CDs has been around for so long at this point that it's hard to find a media application that doesn't do it. Even so, the official CD ripper of the Gnome desktop (most of which Ubuntu utilizes in Unity) is Sound Juicer, a single-minded little application that tags and rips audio from CDs.

The application couldn't be any simpler; insert a CD and open Sound Juicer from the Applications screen. Sound Juicer, as long as you're online, should auto-detect the album, artist, and track titles and fill them in. If it's a personal mix CD, or one that Sound Juicer doesn't recognize for whatever reason, then you can manually enter the data. If you're not sure which song is which, use the *Play* button to preview the tracks. When ready, click the *Extract* button.

Sound Juicer won't take quite as long as Handbrake, but there will at least be time for a cup of coffee, so relax a little.

Brasero

It's the polar opposite of ripping media, but there are those times when you need to burn a disc instead of rip media off of them. The tool for burning both CDs and DVDs (data discs for large files, or movie discs that will play in people's home theater equipment and computers) is Brasero, another tool that Ubuntu borrows from the Gnome desktop.

Brasero, like so many of the Gnome apps, is terribly intuitive. Let the menus guide you through whatever process you need, but essentially the workflow is to choose what kind of project you want to create: a video disc, an audio disc, a data disc, a disc-to-disc copy, or a bootable operating system disc. Once you've chosen one of these paths, the prompts will be clear; generally you'll need to point Brasero to the source media (ie, the movie you want to burn, or the directory of songs, or the data, or the ISO image of an operating system, and so on) and then insert a blank disc. Wait for Brasero to construct your disc image and then to burn it, and you're done.

You might be catching on to the trend that Linux applications just aren't that hard to use. While there are several levels of expertise that can obviously require more complex choices, most of the everyday tasks you'll be doing at first are all intuitive and easily attained within a few clicks. The learning curve is a lot gentler than oen might think.

Other Types of Media

Nearly every software vendor with a product on the shelves wants to have their own software format, whether it's for office documents, 3d models, music creation, video editing, or just downloadable songs and movies. It's not just on Ubuntu that you'll find yourself having to put effort into remaining compatible with "the rest of the world"; it's a task you'll need on any computer of any platform.

The general idea behind staying compatible is threefold:

- Use open formats when possible.
- Find libraries to support a format.
- Find converters to open files of incompatible formats.

The first one is obvious, but it's often ignored (either intentionally or unintentionally) and is sometimes difficult to get other people to play along. Even though Ogg Vorbis and Theora, Webm, Xvid, Dirac, and Matroska are open formats, they remain excluded on closed source operating systems.

There's no logic to the problem, so the solution starts with the second point. If you find yourself needing to open a file format that your computer cannot seem to recognize, look for the programming library that does. Usually an internet search reveals what you'll be looking to install via the Ubuntu Software Center; and whatever library you find and install will in turn allow your operating system to "understand" the file format you're dealing with.

Just because your OS "understands" the file format doesn't mean you will have an application to open and use that file. That sounds confusing until you think of it in extreme terms; your computer might "know" what a .doc file is, but unless you have Libre Office installed, what would you open the .doc file in, anyway? Certainly not Rhythmbox or Firefox. Obviously you need the appropriate application. So after you've found the support library for the media file you are dealing with, go and find an application that is designed to use the library you have installed and the file format for which you are trying to find support.

If you keep these three simple steps in mind, you'll get used to reverse-engineering, in a way, the compatibility issues that you come up against in every day life, whether it's on Ubuntu or on any other platform you might be using at any given moment. So don't get held back by a misunderstood file format ever again; with a little research and a few clicks, you can install the support you need. ■
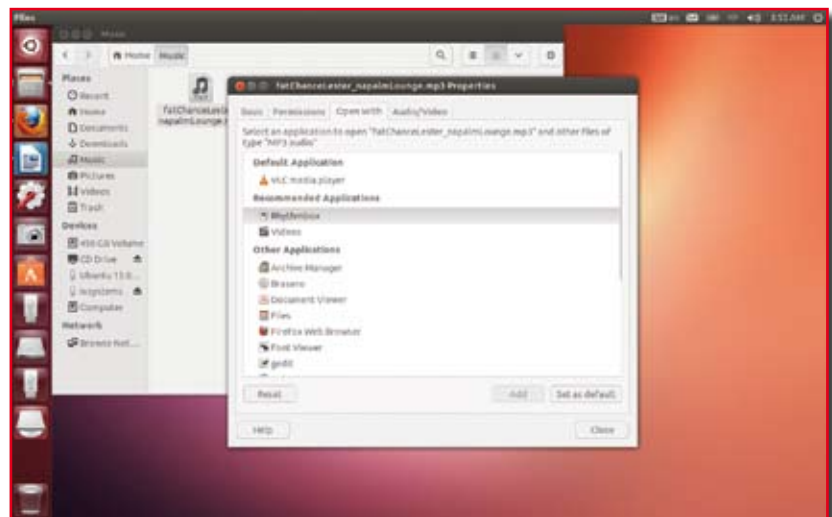

Figure 4. *Override your own system defaults on a filetype-by-filetype basis*