17

Multimedia
(If Music Be the Food of Love . . .)

Playing music on your Linux system is only the beginning of the multimedia experience. After all, multimedia isn't about just music. It represents a cornucopia of sensory experience delivered digitally, comprising text, audio, video, and endless combinations of the three.

Most modern Linux installations offer an impressive selection of programs to satisfy your cravings for the multimedia experience, from audio to video and everything in between. These programs include sound control systems, CD players, recorders, MIDI programs of varying flavors, music synthesizers, video players, music notation programs, and . . . the list goes on.

In this chapter, I'm going to cover some of the more popular multimedia tools for your Linux system. So, as old William Shakespeare might have said, "If music be the food of love, then multimedia must represent the smorgasbord."

Adjusting the Levels

Think back for a moment to those days of old when Mom or Dad would yell into your bedroom to "TURN THAT NOISE DOWN!" Doesn't that bring back memories? In particular, it brings back the memory that sometimes, you just have to crank the tunes.

Most music or multimedia players you are likely to use under Linux have some kind of a volume control. Your speaker system likely has one, as well. There is, however, a third set of controls you should know about—KMix, the master mixer controls on your system (Figure 17–1).

Figure 17–1 Kmix controls.

The various sliders correspond to various levels, from that of your CD player itself to the PCM output, microphone inputs, and so on. Pause your mouse pointer over the sliders, and a tooltip will tell you what that slider does. The left-to-right slider at the bottom is for your left-to-right speaker balance.

If you close KMix now (click the X in the top right-hand corner), you'll still have quick access to probably the most important item, the master volume control. Look down into the system tray at the bottom right corner of your screen, and you should see an icon that looks like a speaker (Figure 17–2).
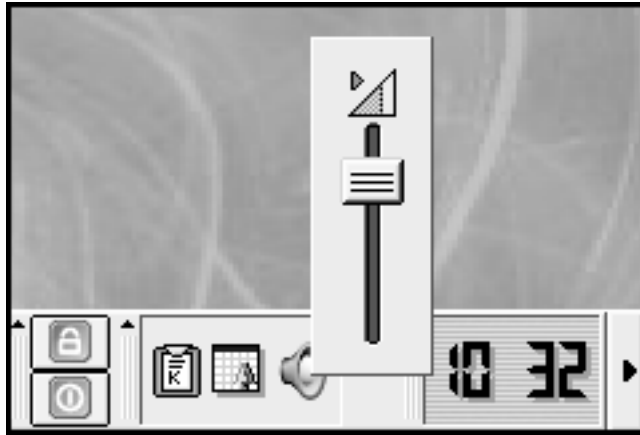
Figure 17–2 A volume control in your system tray.

Click on that speaker icon, and a volume control slider will appear. This provides you with a fast means of making volume-level adjustments.

> *Quick Tip* If you find that the levels are still a bit low (particularly if you are running Mandrake), you may want to check out the global system settings. This is controlled by a program called `aumix`, which you can call from the command line or via your <Alt+F2> quicklaunch. This is a simple GUI from which you can drag the levels to something more to your liking. When you are done, click File on the menu bar, then Save, and Quit.

Now that you can easily modify the level of *noise* coming from your speakers, it's time to get some music on.

KsCD, the KDE CD Player

You might remember seeing a snapshot of KsCD earlier on in this book, when I was discussing command execution (Chapter 4). This is the default CD player included as part of the KDE desktop (Figure 17–3).

Figure 17–3   KsCD, the default KDE CD player.

If all you want to do is play your CDs and you want a simple, easy-to-use interface, look no further. Click the application starter (the big K), and look for KsCD under the Multimedia menu (the command name is kscd). Then push the play button, sit back, and enjoy.

XMMS

XMMS is pretty much the standard Linux media player but it is much more than a music player. Properly used, it is a spectacular light show, as well. It supports OGG Vorbis, MP3, and WAV formats. With the right extensions, you can also use it to play RealAudio and even MPEGs. More on that later.

Every major Linux distribution comes with XMMS, so you don't have to go far to find it. If it isn't already part of the installation, have a look on your distribution CD-ROM. If all else fails, you can always go to the source at http://www.xmms.org for the latest and greatest.

To start the program, look for XMMS under your Multimedia menu, or type xmms & (either from a shell or by pressing <Alt+F2>) and press the <Enter> key. If this is the first time that you start XMMS, you'll see something that looks like the amplifier on your home stereo system (Figure 17–4).

Notice that there are three *components* in my screen capture. If you are starting XMMS for the first time, you are likely to see only the amplifier module at the top left. Look at the buttons on the right of the amplifier. You'll see one labeled *EQ* (the equalizer) and *PL* (the playlist). Clicking these *buttons* will bring up the two additional modules for your stereo system. The buttons themselves may take some getting used to. They look more or less the same as you would expect on a home system and perform the same functions but, as you shall soon see when I explain *skins*, the *look* is very flexible.

Figure 17–4 *XMMS amp, equalizer, and playlist.*
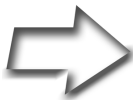
> *Quick Tip* Before you try anything with XMMS, I should tell
> you that each of the three modules can be moved about
> individually on the screen. The arrangement I'm using, with the
> amplifier on top of the equalizer on the left and the playlist
> on the right, isn't the only variation. Consequently, you may
> find yourself readjusting their positions more often than you
> care to. The easy way to solve this is by right–clicking on the
> amplifier module, choosing Options from the menu, and
> choosing Easy Move. There's a <Ctrl+E> keyboard shortcut, as
> well.

If you want to play songs, click the +FILE button on the playlist editor, and
select the songs you want from the file menu that appears. If you hold that
button down for a second or two, you'll also have the opportunity to add a
Web link (+URL) to a collection of songs, or a directory (+DIR). The button
directly to the left of it (-FILE) lets you undo your choices. Once you have
made your choices, press the play button.

XMMS Light Shows

XMMS has extensive plugin support for input, output, and visualization. To get
at these, use the Preferences menu (the shortcut is <Ctrl+P)>. A new win-
dow will pop up, offering you tabs for various runtime options, fonts, and so
on. This is also where you find the control for the various audio I/O, special

effects, and visualization plugins (Figure 17–5). If you should find yourself having any problems with sound when you first start up XMMS, this is the place to start. Look under the audio section and check the output plugin. Running under KDE, you will likely use the aRts driver, but if XMMS is a little too silent, try the OSS Driver.
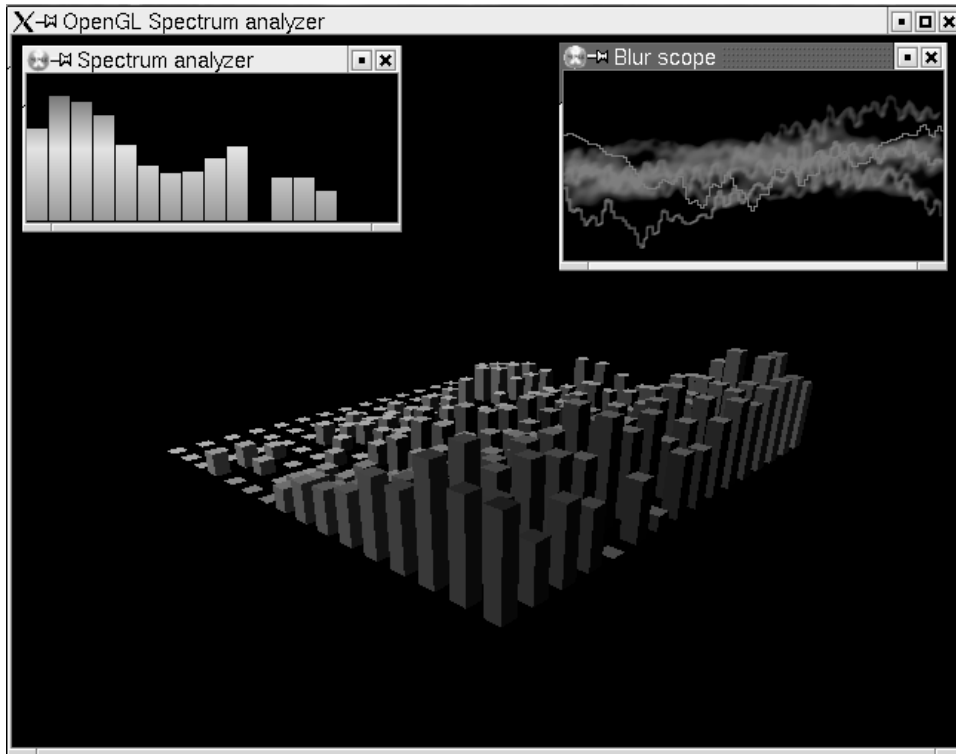

Figure 17–5 Some visualization plugins accompanying the music.

I could spend a great deal of time talking about the various options. Instead, I invite you to check out the various options on your own. What I wanted to talk about is the little light show effects, and these are the *visualization plugins*. To activate a plugin from Preferences, click on a plugin, then click the Enable plugin radio button.

We have things here such as Spectrum Analyzer and Blur Scope. Earlier on, I mentioned the OpenGL Spectrum Analyzer, another cool plugin that provides colorful 3D visuals to accompany your music—you can even launch that one full-screen; sit back, and enjoy the show.

Skinning XMMS

One of my favorite features of XMMS is its *skinability*, if you will. Using skins, I can change XMMS's look from its default black metal face to something more classic, such as cherry wood or a refined brushed aluminum. Using the <Alt+S> shortcut brings up the Skin Browser, which you can also select through the right-click menu. Mandrake Linux is *particularly nice* this way. This distribution includes a large number of skins for XMMS.

If you don't have any skins in your list, you need to get yourself some skins. For that, head to the XMMS Web site at www.xmms.org and click Skins on the menu. I guarantee you won't be getting bored anytime soon. There are literally tons of skins available.

So how do you install these skins? All of the skins on the Web site are in tar.gz format. Find one that appeals to you, download it, and save it to your $HOME/.xmms/Skins directory. You don't need to extract the file—just save it to the directory. Now right-click on the amplifier, select Options, and click on Skin Browser. Your installed skins should be available for you to select (Figure 17–6). To preview a skin, click on it, and XMMS will change to the new skin.
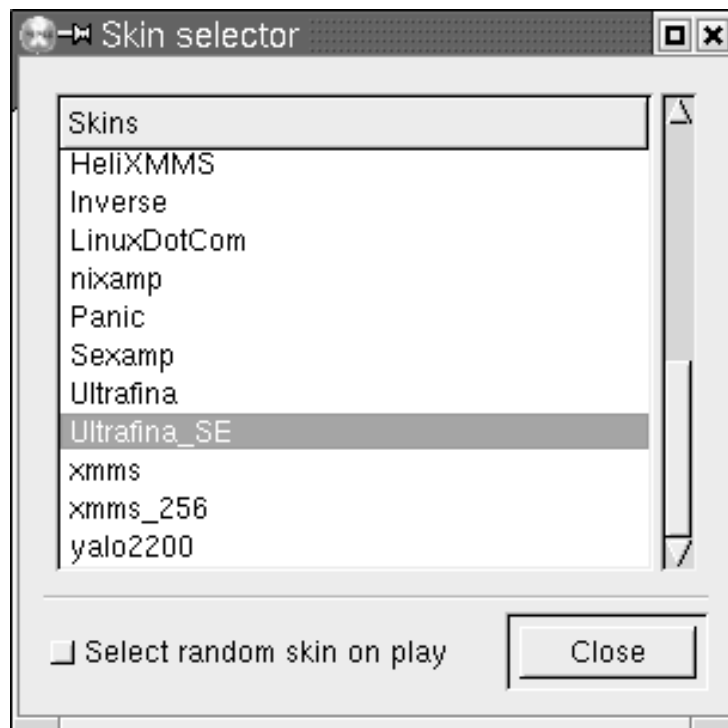

Figure 17–6 The XMMS Skins browser.

You can even click the Select random skin on play button if you'd like some automatic variety.

I'm going to leave XMMS behind on this topic of skins because the next application does skins in a great way, as well. I started off with XMMS, but KDE also has a great little program called *Multimedia Player*, or more rightly, *Noatun*.

Noatun

Sounds a bit like *know a tune*, doesn't it?

You can access the program by looking under the big K, choosing Multimedia, then clicking on the KDE Media Player or you can type `noatun &` at the command line. The problem is that when you fire it up for the first time, it tends to look a little boring, as in Figure 17–7.
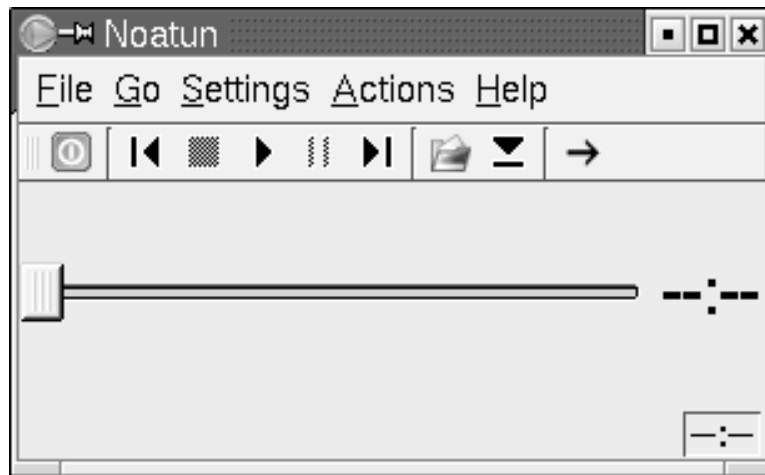

Figure 17–7 Noatun's default look.

Don't let that disappoint you. That is the default skin, named *Excellent*. Like XMMS, you can skin Noatun—in fact, some of Noatun's skins are downright wild. Before we get into that, however, let's just talk about playing songs with Noatun.

Click File on Noatun's menu bar and select Open. Navigate your directories until you get to a song you want to play. Select it, and click OK. In all likelihood, nothing will happen at this point. That's because you are loading songs into a playlist. To get to that playlist, click Settings and select Show Playlist.

You can also click the Playlist icon just under the menu bar, the second icon from the right. (The final icon lets you select between single play and playlist looping.)

At this point, you can just keep adding songs to the playlist (you can also add directories if you have collections you want to add). Eventually, you'll have your list. Click the diskette icon on the playlist (see Figure 17–8) to save your list. You are all set. Select a starting song in the playlist, and click the play button on Noatun's main screen (or click the starting song in the playlist).
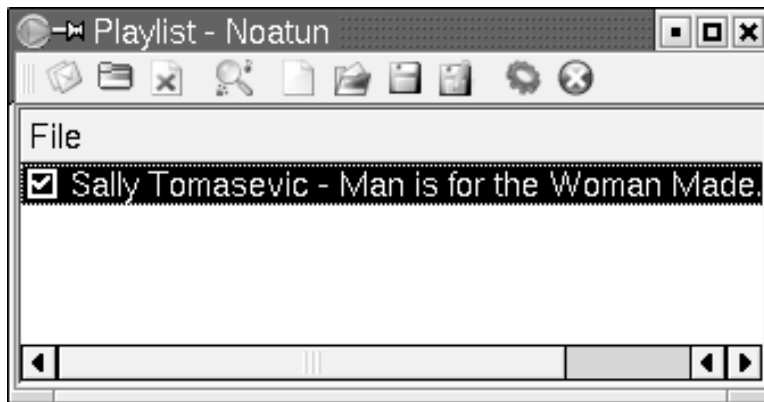

Figure 17–8 Noatun's playlist.

Noatun's slider is positional within the playing song. You can control volume using your KMix applet in the system tray, as well as through Noatun. To see the volume control, click Settings on the menu bar and select Show Volume Control.

Quick Tip You can also use Noatun to play video clips.

Skinning Noatun

Let's get back to the subject of skinning Noatun.

Click on Settings, followed by Configure Noatun. From the pop-up menu that appears, choose Plugins, which will then give you a tabbed menu. Under Interfaces, you'll see four options for player styles. The skinable styles are *K-Jofol*
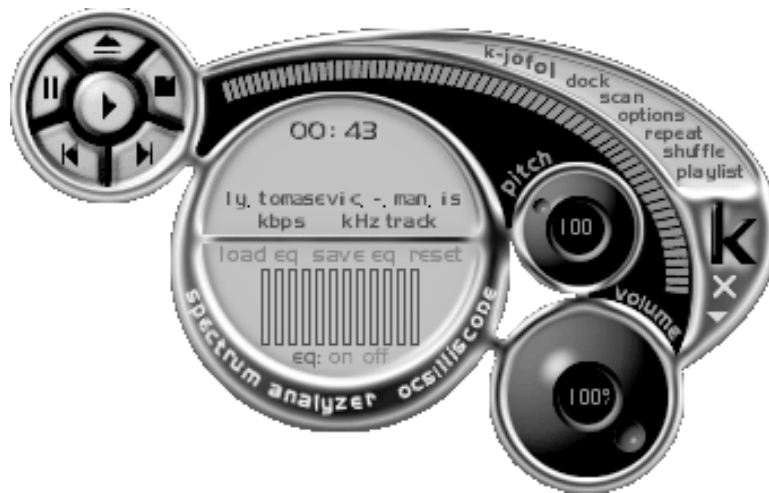
Figure 17–9 Noatun with a K-Jofol skin.

(Figure 17–9) and *Kaiman* (although there is also a Winamp skin loader). In both cases, you can find additional skins on the KDE-Look Web site at `http://www.kde-look.org`.

Start by clicking off the *Excellent* interface and clicking on the *K-Jofol* interface. You'll see the menu bar at the left change. It now shows a K-Jofol Skins option. The same would happen with the Kaiman interface but, obviously, with Kaiman skins. If you click on this menu option, you'll see a drop-down list on the right with a preview of the various installed skins.

> *Quick Tip* For the curious readers out there, Noatun skins live under the `$HOME/.kde/share/apps/noatun/skins` directory.

Noatun Lightshows!

When I told you about XMMS, I mentioned the variety of cool plugins you could use for visualization. KDE's media player, Noatun, has these as well. In the Configure Noatun Interfaces menu, select Plugins (from the left-hand sidebar), then click Visualizations.

Ripping and Burning Songs

Over the years, we have all purchased a lot of music CDs or, as some of us still call them, *albums*. Many of those albums, unfortunately, have only two or three songs we really liked, so playing the whole album wasn't what we wanted. As a result, we created collections of our favorite songs on tape and played the tapes, instead.

These days, with the help of our Linux systems, we can create our own collections from those albums we have purchased and create CD collections of those songs we want to hear. Furthermore, if you have lots of disk space and you spend a lot of time at your computer, nothing beats a collection of songs ready to play without having to change CDs all the time. Pulling songs from a CD and saving them to your system as digital images is what is commonly referred to as *ripping*.

Intermezzo: Digital Audio Formats

Before I get into the mechanics of ripping and burning songs, I'd like to spend a small amount of time discussing music formats. When you purchase a CD, the songs on that CD are in a format not generally used by your system. In fact, when we copy songs to disk from a CD, we always encode it into another, usually more compact format. The format we transfer to is identified by a three-letter extension on the file name. The most common formats are `.wav`, `.mp3`, and (more recently) `.ogg`.

The *wav* format is one originally created by Microsoft. It is extremely common but not the most efficient in terms of compression. The *mp3* format (from the Motion Pictures Experts Group, aka MPEG) on the other hand, owes its popularity to the high compression ratio it uses—about 12:1. The newcomer on the block is the *ogg* (or Ogg Vorbis) format. Like mp3, it boasts a high compression rate, but unlike mp3, it is completely unencumbered by patents.

To give you an idea of the compression values, I ripped a 3-minute, 46-second song to wav format. It came in at 39866444 bytes, while the same song in ogg format required only 3438407 bytes. If you do the math, that is a ratio of 11.6:1. Pretty impressive reasons for not using wav format files.

Grip

Most distributions will come with Grip, a CD ripper designed for the GNOME desktop. As I've explained before, being GNOME-based doesn't stop this program from doing its job under KDE. Using a library called *cdparanoia* (which I

will discuss later), Grip makes it possible to create MP3s or OGGs easily from your favorite CD. If the program is installed, you will likely find it in your multimedia menu. You can also call it by its program name (using the shell or the <Alt+F2> program launcher), grip.

Grip consists of a single window with multiple tabs. Each tab presents you with a window from which various functions are performed (i.e., Tracks, Rip, and Config). The main Tracks tab features a list of the current CD's audio tracks, including track number, title, and length in minutes and seconds. The CD's title and artist appear just above the track window.

As you can probably tell by looking at Figure 17–10, Grip is also a CD player. Using the buttons at the bottom of the program window, you can play, pause, fast forward, or pause playback, just as you did with KsCD. The extra buttons let you open or close the CD-ROM drive, change the volume, edit tracks, perform track lookups, or switch to compact, player-only mode (Figure 17–11). If you move your mouse over the buttons and pause, tooltips will appear, informing you of the various button functions.
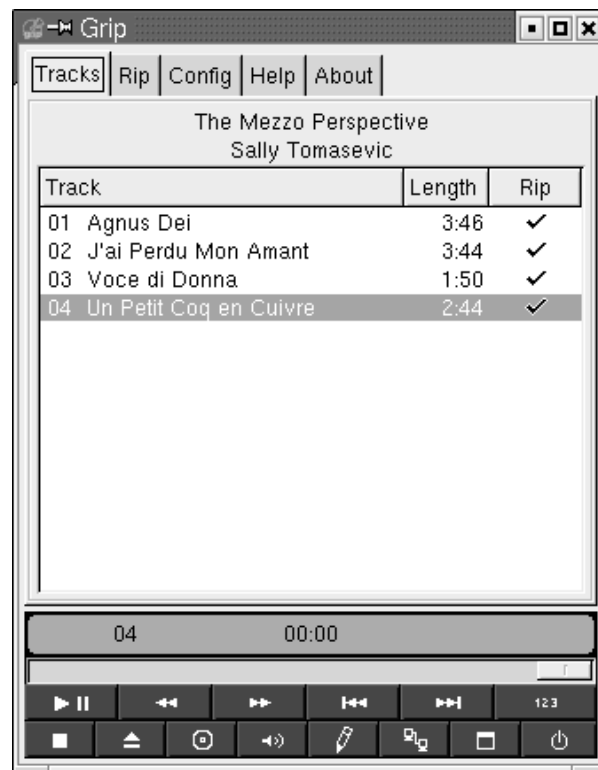

Figure 17–10   Grip ripping songs from a CD.

Figure 17–11   A more compact Grip.

To rip tracks to disk, either right-click on the track name or left-click under the Rip column heading at the track name's far right. In either case, a checkmark will appear, indicating that the track is ready for ripping. You can also quickly select all the tracks by clicking on the Rip column label. When you have selected the titles you wish to rip, click the Rip tab (Figure 17–12).
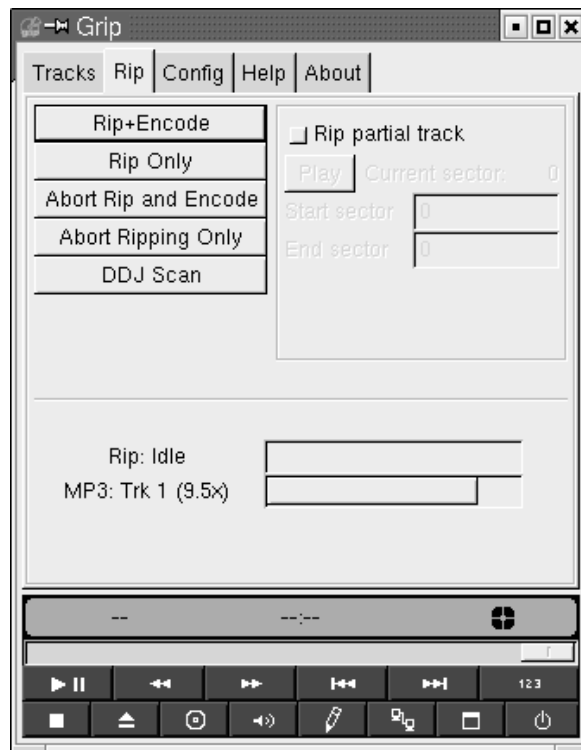
Figure 17–12   Ready to start extracting songs.

If you just go ahead and click Rip Only, the track will be saved in wav format (remember our discussion of compression). Click Rip+Encode, however, and Grip will encode and compress the disk file into ogg or mp3 format. The default encode is ogg format. To save as mp3, you will need an mp3 encoder, such as *bladeenc* or *lame* (check `rpmfind.net` for binary RPMs or check the resources section at the end of this chapter).

When the process starts, a progress indicator bar (about two-thirds of the way down) will detail the status of the rip. The resulting songs will be saved in your home directory under a folder called *mp3*, using the following format.

```
/home/username/mp3/artist_name/album_name/track_title.ogg
```

You can change this default by clicking the Config tab and selecting MP3, Encoder. There are a lot of possible settings here: dealing with the ripping process itself, MP3 encoders, online disc information servers, and file formats. The options are many, but the defaults are probably all you need if you are just writing songs to your disk. Grip comes with excellent help files for every part of this process. If you get stuck, just click the Help tab.

You'll notice I said *to your disk* at the end of the last paragraph? That's because Grip is strictly a ripping and encoding program. If you want to get those songs burned to CDs, you'll need a CD burning package. Luckily, this won't be a problem.

K3b for a Friendlier Burn

I still find it interesting to consider the terms that have entered the language when referring to creating CDs. We rip, then we burn.

Considering the violent-sounding nature of the process, anything that simplifies the process and makes things a little friendlier is certainly welcome. One of the friendliest tools for creating and copying audio and data CDs is called *K3b*. You may have K3b available on your system, but if it isn't, simply visit `www.k3b.org`. Both source code (it is GPLed, after all) and precompiled binaries are available. The program name (should you wish to run it from the shell or via the <Alt+F2> launcher) is `k3b`.

Installation Note K3b depends on the cdrdao package.

When you fire up K3b for the first time, you'll get a little warning message alerting you to this fact and advising that you should consider running K3b

Setup. Click Yes here, and the setup program will automatically be started for you. Because, as you might expect, k3bsetup requires root permission, you will be asked for the password before continuing.

The K3b setup program is basically a wizard that takes you through a question-and-answer session to determine what drives you are using, who has access to the program, and so on. Click Next past the introductory screen, and you'll see the first of a few interesting dialogs (Figure 17–13)—this one deals with the external applications used by K3b. You should have *cdrdao, cdrecord*, and *mkisofs* listed among the available programs. Beyond that, you don't really need anything else. If these are listed, click Next.
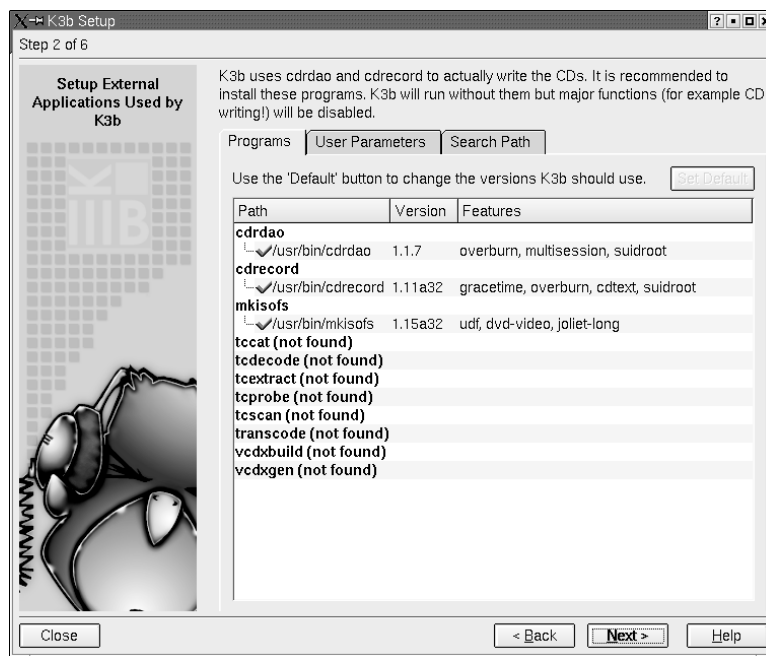

Figure 17–13   K3b setup for external programs.

On the following screen, the setup program will display the drives it has detected as being useful to burning CDs. For instance, if you have both a CD player *and* a CD writer, these should both be listed. On my system, I had a DVD player in addition to my CD writer (Figure 17–14). If a device appears missing and you believe it should be there, click Add Device and enter the information. Normally, you should only have to click Next past this screen.
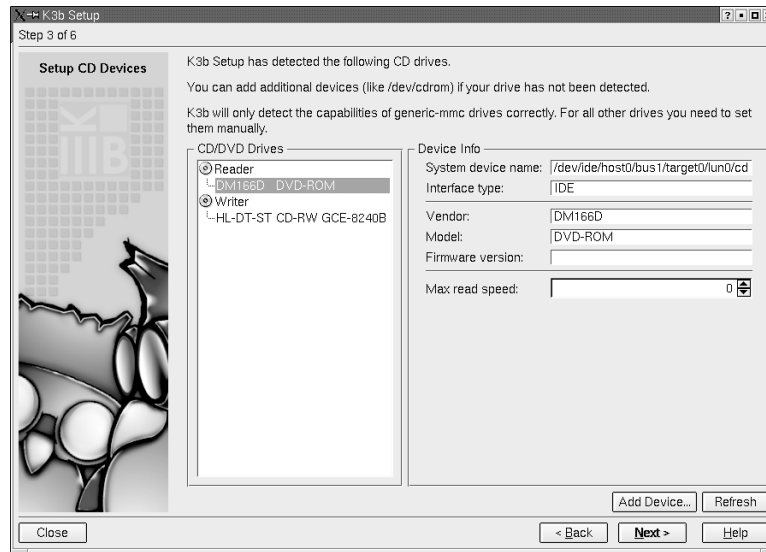
Figure 17–14   Device detection in K3b Setup.

The same holds true for the fourth screen. K3b will want to create mount points for the devices it chose in the previous step. Unless you feel things should be different, let K3b create the file system entries by clicking Next. The following screen (step 5 of the setup) is for user security, namely, which users are allowed to burn CDs. Click Add User and enter the name of the user to which you intend to grant permission. Keep adding until you have everyone. If you skip this step, only root will be able to create CDs.

The final screen is just a feel-good screen, congratulating you for a job well done. So are you ready to burn some CDs? Then let's get started.

Getting Familiar with K3b

K3b's interface is friendly and very easy to use. It is broken up into three main windows, with two top frames and one larger one at the bottom, all of which can be resized to your tastes. The top left-hand frame is your file navigator, showing your directories in the Konqueror-like tree format you are now familiar with. Just click the plus signs to open a directory or the minus sign to collapse it. The top right-hand frame will display the contents of whatever folder you have selected on the left-hand side.

Creating a CD of any kind in K3b is done with *projects*, and that is where the bottom window comes into play. If you are looking to create an *audio CD*, click File on K3b's menu bar and select New Project, then click on New Audio Project. If
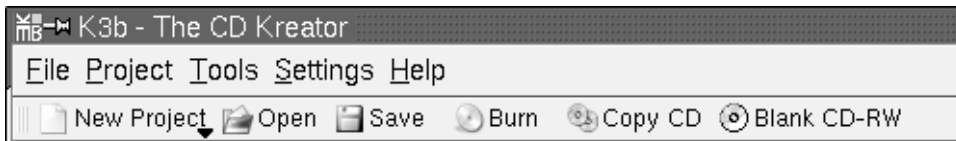
Figure 17–15 K3b's menu bar.

you were creating a data CD (which we will cover shortly), you would click on New Data Project. Have a look just below the menu bar, and you'll see a handful of quick-access buttons (Figure 17–15). You can click the New Project button there, as well. The additional buttons, labeled *Open, Save, Burn, Copy CD*, and *Blank CD-RW*, are also interesting, and I'll cover those things shortly.

Look to the bottom of the screen, and you'll notice that a tab labeled *Audio1* will appear under the Current Projects banner. You can create multiple projects, and each will appear with its own tab.

Backing up Your Data with K3b

K3b makes a quick and easy tool for backing up your important data. The best approach is to use CD-RW, or rewriteable CDs, because you can use them over and over again. Before you reuse your CD-RW, you'll want to blank it first. Pop the disk into your CD rewriter and click Blank CD-RW (just below the menu bar).

A window will appear (Figure 17–16), showing you some options for blanking the CD-RW. From there, you can select which CD writer you wish to use
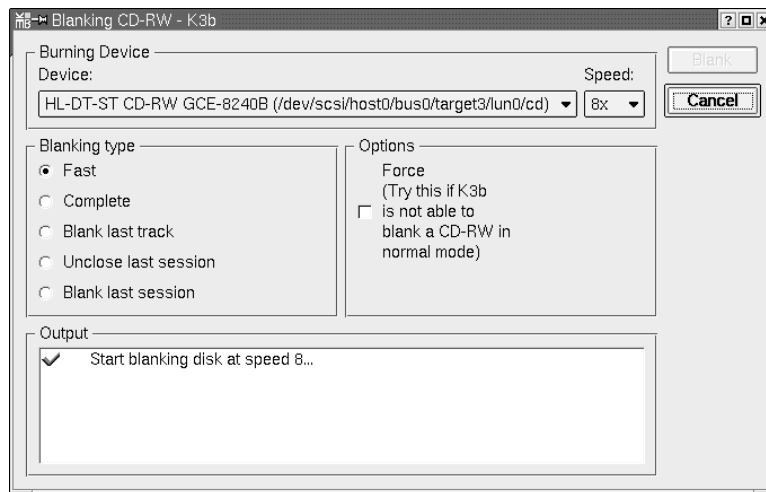

Figure 17–16   Preparing to blank a CD-RW.

(if you have more than one), the speed at which you want to perform the operation, and whether you want a fast blank or a complete erase. When you are happy with your choice, click the button labeled *Blank* at the top right-hand corner of the window. Just below all this is an Output window, where the progress of blanking will be displayed. After your successful completion message, you will still want to click Close to banish the window.

Now you are ready to back up your data. Start a New Data Project. A tab with a sequentially generated name will appear in the bottom projects window (Figure 17–17). It will be divided into two windows. On the left-hand side, you'll see a small icon representing a CD with the current project name next to it. On the right will be a blank list with headings for file Name, Type, Size, and Location.
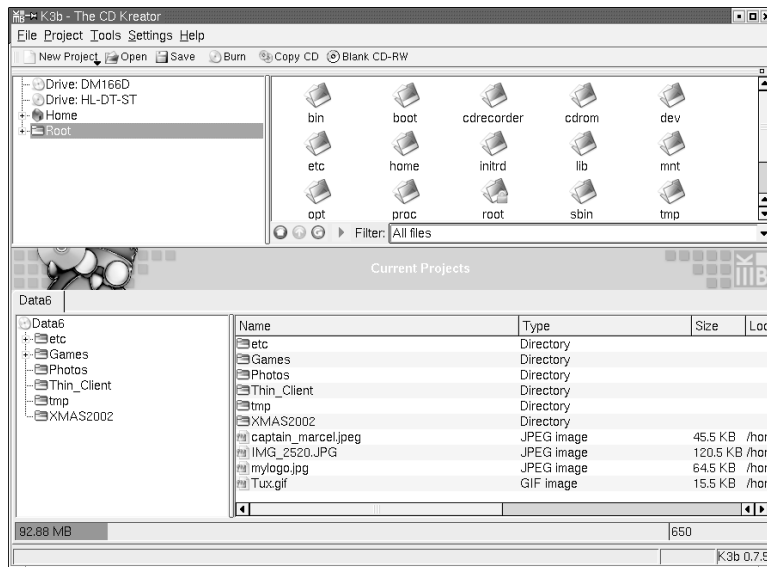

Figure 17–17   Creating a data CD.

To fill this project, simply drag directory or files onto the CD icon in the left-hand side project window. As each directory is added, K3b will calculate the amount of space all of this takes. Consequently, it may take a few seconds for a large directory to appear as these calculations are being made. A colored bar will stretch along the bottom, indicating the amount of space you still have left to create your data CD.

After you have added everything you want, click the Burn icon directly below the menu bar. You can also right-click the current project tab and select

Burn there. A new Write window will appear, with four tabs labeled *Burning, Volume Desc, Settings*, and *Advanced*.

I won't cover everything on every tab here, but I will tell you about a few of the more important settings, starting with the Burning tab. If your device is capable of high-speed burning, you may want to change the setting for Speed. The default speed of 1 is fine but very slow, and modern writers can handle much better performance. Part of this comes from the *Burn-Proof* technology built into many devices. If yours is capable, make sure you check this option on.
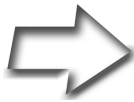
Quick Tip A rather odd-sounding option is Simulate Writing, located on the Burning tab. After all, why go through the process and not do anything? The idea is to see whether a disc can be properly written at the current speed. Everything happens as it would, except that the laser is turned off. This is also where the Writing on the fly option will come into play. If your system performance is such that you can burn a disc without writing out an image first, make sure you check this option on.

The Volume Desc tab allows you to set some label information for your CD, such as the name, who created it, and what system it was intended for. You don't actually need to enter anything here. It is information only. Skip over the Settings tab for a moment and look under the Advanced tab, where you'll find a number of miscellaneous options related to how data is written on your CD. For most users, these can be left alone.

Did Someone Say "Backups?"

Not yet, but by now you must be thinking, "Hey, if I can copy data directories to my CD, surely I can use this thing to do backups," and you would be bang on. Other than the limitations of the CD's roughly 700 MB of storage, this is a great option. Use CD-RWs, and you can create a rotating set of discs for backup purposes.

Taking all this into consideration, we're onto something here, but there are some things to consider.

Look under the Settings tab, and you'll find a couple of important settings related to data backups. The first has to do with whether you will ever be looking at this CD using a Windows system. If so, make sure you check on the Generate Joliet extensions box. Under Permissions, check on Preserve file

permissions if this CD is a backup of your data. Should you ever need to recover from this CD, you'll want to have the proper ownership and permissions of files and directories maintained.

When you're done and ready to go, click on the Write button located in the top right-hand corner of this dialog box. A new progress window will appear with status information on the current CD creation (Figure 17–18).

That's it. With your data safely backed up, you can sleep soundly at night.
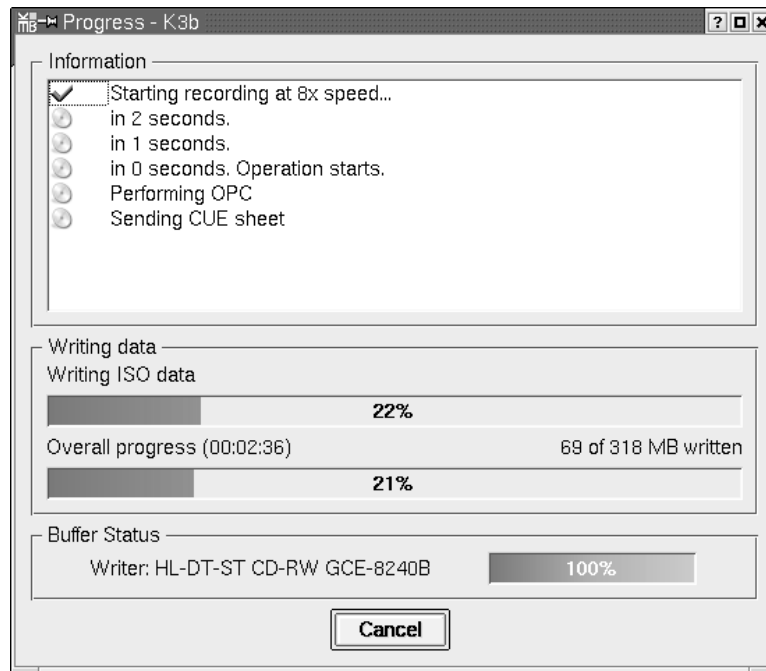
Figure 17–18   Watching the status of a burn in progress.

Creating a Music CD with K3b

Data is fine, of course, but I started this chapter talking about music. The good news is that if you've already mastered the art of creating a data CD with K3b, you are well on your way to doing the same with music.

When you start K3b again, select New Audio Project this time. In the upper left side window, click on the directory where your songs reside. You should see them appear in the top right-hand window. Simply click on a song,

then drag it into the Audio project window at the bottom. Once again, a status bar at the bottom will let you know how much time this takes up on the CD. Just keep an eye on the total time as you add songs.

Don't worry about the order in which the songs appear on the list. When you have your selection complete, simply click on the songs in the lower pane, and move them up or down at will. If the song in position six would make a better opener, drag it up to position one. It is that easy.

When you are done, click Burn. As the window appears, you might notice that it looks a little different than the data burn window. For starters, there is one less tab. Of those tabs, the one originally labeled *Volume Desc* now says *CD-Text*. We'll start with that one in that, like its data counterpart, it is for information only. This is where you enter the CD label information, performer name, or other information related to this disc. Should you decide to simply leave this blank, your CD will still work.

The Advanced tab is much simpler than on the *data CD* dialog. The only option is a strange little trick to hide the first track of a song in the first pregap. If you do this, you won't find the song on a straight play. You'll have to seek backward from the first song.

Finally, we'll go back to the Burning tab. There's really nothing new here that you haven't already seen. Select your write speed and click Write.
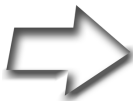
Quick Tip If you always use the same settings when burning either a data or a music CD, click the Save User Defaults button on the Write CD dialog.

Lights, Camera, Action: Moving Pictures

Believe it or not, you have already worked with one of the Linux video players in this chapter. It is Noatun, KDE's media player. It is just as adept at playing video clips, such as AVI or MPEG files. Try it!

If you have a DVD player installed on your system, you will likely want to take advantage of it. One of the more popular and slick-looking video players out there is *xine*. xine plays back video clips (such as AVI, MOV, or MPEG) and DVDs, as well. It can even handle URLs, meaning that you can play remote files on the Internet.

You can start xine from your Multimedia menu (command name *xine*) or by calling the command directly. Looking at Figure 17–19, you'll see xine's basic interface. Most of the buttons are pretty self-explanatory (play, forward, rewind, etc.). Others allow you to switch to full-screen mode. To see what everything does, move your mouse cursor over the various buttons, and tool icons and a helpful tooltip will appear.

Figure 17–19   xine's main controls are very approachable.

Now sit back and watch a movie (Figure 17–20)!

For more information on Linux videos and DVDs, visit the Linux Video Project at http://www.linuxvideo.org/.

Figure 17–20   Watching a movie on Linux with xine.

A Note on Encrypted DVDs

You may find as you play DVDs on your Linux system that some DVDs work and others do not. The reason for this is encryption. In an effort to protect against unlawful copying and distribution of movies on DVD, some companies in the motion picture industry have gone to extremes to protect themselves using a system called *Content Scrambling System* (CSS). The result of this overreaction curtails the freedom of those law-abiding individuals who are looking to play the DVDs that they legally bought and paid for on the DVD player that they legally bought and paid for on the computer they legally bought and paid for.

"There's a simple solution," you say. "Why not write or use software that decrypts the DVDs so you can watch them?"

Well, it isn't that easy.

In some countries, most notably the United States, it is illegal to use software that decrypts any form of encryption put in place by another individual or company, even when it is for private use (do a Google search on *DMCA*). As I write this, legal challenges to this law are currently in the courts and in some cases, have already upheld the right of the individual. This isn't to say that the motion picture industry will give up easily.

For instance, under the DMCA, a small handful of individuals have been charged for distributing a piece of software called *libdecss, libdvdcss* (or simply DeCSS), which lets you play encrypted DVDs on your Linux PC. The California Appeals Court ruled that the posting of source code (in this case, DeCSS) is upheld by the First Amendment.

Meanwhile, in Norway, a young man named Jon Lech Johansen was cleared of wrongdoing for distributing DeCSS software on the Internet. The 19-year-old "DVD Jon" faced two years in prison when the Motion Picture Association of America (MPAA) requested that Jon be arrested (he was only 15 at the time). In fact, the MPAA wanted both Jon *and* his father arrested.

Why am I telling you all this? I mention all of this because I want you to make yourselves aware of the laws in your area. Playing a DVD on your PC sounds like a perfectly normal and legal thing to do—I agree, but I must repeat myself—you should be careful and make yourselves aware of the laws regarding this as they apply to your state, province, or country. I don't want to hear that any of you are facing jail time just because you decided to watch your legal copy of the latest blockbuster on your Linux system.

Playing the MS-Only Plugin Game

Yes, despite the fact that Linux *is* the future, there are companies still producing plugins without a Linux equivalent. The obvious one here is Microsoft's own Windows Media Player. The benefits of running Linux far outweigh any possible downside to not having access to these players, but, as it turns out, you do not have to do without. Consider getting your hands on a copy of the *Codeweavers CrossOver Plugin*. This marvelous piece of software makes it possible to use native Windows plugins for Quicktime, ShockWave Director, Windows Media Player, and others seamlessly in your favorite Linux browser. For all those movie trailers that seem to be available only in Quicktime format, the CrossOver Plugin is a must, and although this isn't a free product, it is quite inexpensive. Installation is a piece of cake, and you won't need to feel left out when the next blockbuster preview shows up at a Web site near you. Still interested? Here's the address:

```
http://www.codeweavers.com
```

Furthermore, some CrossOver plugins can be used externally from your browser as stand alone programs. After installation, these will be made available in your KDE menu.

Then, There's Mplayer!

What the Codeweavers CrossOver Plugin has going for it is that you get to use the *actual* Windows plugin on your Linux system. It's the real thing and consequently looks just like the official product. Still, if you are willing to forego that *official* look, there is a freeware alternative that will do the job very nicely. It's called MPlayer. It is also a great media player that can handle both audio and video streams, play from a TV tuner card, record audio and video, and more. It works beautifully from the command line, but it also has a great, skinnable GUI. MPlayer requires a little more work up front, but the results are worth it, and it won't cost you a penny.

Some distributions such as Mandrake, already come with MPlayer, so check your distribution CDs first. In order to use the GUI, you'll want to install the `mplayer-gui` and `mplayer-skins` packages as well as `mplayer` itself. If you don't have it (or you want the latest and greatest), pay a visit to the MPlayer Web site at `http://www.MPlayerHQ.hu`. You'll find both source distributions as well as RPMs.

Tip Why not use your Konqueror shortcuts to search for a package:

```
rf: mplayer
```

MPlayer handles tons of video formats, from avi to mpg to Windows Media Player to Quicktime, and just about anything you can think of. The same is true for audio (think Ogg, MP3 and so on). MPlayer performs this magic by using a series of *codecs* (coder/decoders), little software translators that take a foreign video or audio format and let you enjoy it on your Linux system. To get the latest bundle of Win32 codecs, visit the following URL.

```
http://ftp.lug.udel.edu/MPlayer/releases/codecs/
```

You'll find different bundles there and for different video formats, but you may as well download the full set. The packages are tarred and compressed with bzip2. Open up a Konsole and cd to whatever directory you downloaded your codecs bundle. Once there, type this command:

```
tar -xjvf win32codecs.tar.bz2
```

This will create a subdirectory called win32codecs. Switch to that directory, and (as root) copy all the codecs to /usr/lib/win32. If the /usr/lib/win32 directory doesn't already exist, you should create it.

```
cd win32codecs
su -c "mkdir -p /usr/lib/win32"
su -c "cp * /usr/lib/win32"
```

Notice the "su -c" before each of the commands. You might remember this from chapter 7. This command lets you quickly jump into root to perform the necessary steps, then jump back.

Once you've done all this, MPlayer is ready to use. Let's say that you have a movie clip called "*exciting_movie.avi*." To play that movie clip with MPlayer, you would open a shell and type the following:

```
mplayer exiciting_movie.avi
```

To use the graphical or GUI version of the player, run the command "gm-player" instead.

Using the GUI is even easier because it provides a familiar interfrace for loading files as well as controlling all aspects of the playback (fast forward, pause, etc.). With the *Open* button, you can select the files you want to view, or point to your DVD drive and select the files you would like to view. Of course, the look of the interface will vary based on the skin you choose. Figure 17-21 shows off the default MPlayer skin.

When you first run the `mplayer` command, it will create a ".mplayer" subdirectory in your home directory. From there, it will read a file called "config" where you can add various configuration options, select audio and video output sources and so on. You can create or edit the `config` file with the Kate editor (covered in Chapter 16), and modify Mplayer to suit your needs. Here's what my `config` file looks like.

```
# Write your default config options here!
#
vo=xv,x11
ao=arts
```


Figure 17–21   Default MPlayer skin.

I'm asking Mplayer to use my X11 video for output and KDE's aRTs audio system for the sound. If you find yourself with no sound or with video problems, I recommend that you do the same.

When running MPlayer in GUI mode, you can switch to other skins by right-clicking on the interface. This will bring forward a menu with many options, one of which is to activate the skin browser.

MPlayer is powerful and flexible. You can do a lot more with it than I can cover here in a short period of time. For that reason, I do recommend that you read the accompanying documentation, or pay a visit to the MPlayer W eb site to learn more. You can also type "mplayer -h" from the command line for a list of keyboard controls and options.

Using MPlayer as a Browser Plugin

You go visit your favorite movie preview Web site to watch a video clip only to discover that it is in Quicktime or Microsoft media format and that it doesn't work in your browser. I mentioned the Crossover Plugin as a solution, but you can use your MPlayer for viewing those clips as well.

You do this by using the *mplayerplug-in*, an open source plugin that uses Mplayer. Head over to http://mplayerplug-in.sourceforge.net/ and download the latest source (RPM packages for RedHat are also availble there). If there are no packages available for your distribution and you need to build from source, have no fear. It's easy.

```
tar -xzvf mplayerplug-in_v0.80.tar.gz
cd mplayerplug-in
make
make install
```

What the last line really does is copy the resulting mplayerplug-in.so file into your home directory's .mozilla/plugins directory.

```
cp mplayerplug-in.so $HOME/.mozilla/plugins
```

If you want to make the plugin globally accessible, you'll need to know Mozilla's system-wide plugins directory (or Netscape's). For example, with my RPM-installed Mozilla, I would use this command:

```
cp mplayerplug-in.so /usr/lib/mozilla/plugins
```

I'm sure you are more than ready to try this out and you could do so with Mozilla immediately. Start Mozilla, and surf on over to your favorite movie preview site (I tend to like Apple's site for the latest trailers, *http://www.apple.com/trailers*). When you click on a movie clip to view, a window will appear in the browser with the words "mplayerplug-in – Loading movie …"

Sit back and enjoy the show.

It's a Wrap!

It sounds so base for me to say this, but multimedia *really is* about song and dance, dog-and-pony shows, and gratuitous flash and pizzazz. Judging from everything I've seen out there, our appetite for yet another adventure into sight and sound isn't abating anytime soon.

I've shown you a few of the more popular and useful tools to explore Linux sight and sound, but your own appetite for more will likely take you well beyond these pages. On that note, I'm going to give you another handful of Linux tools to excite the ears and eyes.

In the world of audio, check out *KMid* (command name `kmid`) for playing those MIDI files. What makes this program particularly fun is that it is a karaoke player, as well. Plug the words *karaoke*, *midi*, *files*, and *download* into a Google search form, and you should find plenty of files. Just load them up in KMid, click Play, and you are the next international singing sensation.
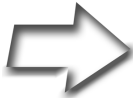
> *Hint* Why not enter the words:
>
>   `gg: karaoke midi files download`
>
> **into Konqueror's Location field for a quick Google search?**

In terms of video playback, another great DVD player is *Ogle* (command name `ogle`). This one probably isn't on your distribution disks, but you can pick it up at the following address:

    http://www.dtek.chalmers.se/groups/dvd/

What Ogle has going for it that xine doesn't (at this time, anyhow) is support for on-screen menus, such as you have with your home DVD player.

Feeling creative? Would you like to take a shot at writing your own music? A number of decent music notation programs are available for Linux. They

include *NoteEdit* and *RoseGarden*, to name a couple. Links to each follow in the Resources section.

Just as there seems to be no end to the number of songs that humanity can create, so it is with software to manipulate sound. If I haven't mentioned it in this chapter, it certainly isn't because it doesn't exist. Check out the *Sound and MIDI Software for Linux* site at `http://linux-sound.org`.

Resources

Blade MP3 Encoder

http://bladeenc.mp3.no/

Grip

http://www.nostatic.org/grip/

K3b

http://www.k3b.org

Lame Encoder

http://lame.sourceforge.net

MPlayer

http://www.MPlayerHQ.hu/homepage/design4/news.html

NoteEdit

http://tan.informatik.tu-chemnitz.de/~jan/noteedit/noteedit.html

Ogg Vorbis

http://www.vorbis.com

RoseGarden

http://www.all-day-breakfast.com/rosegarden/

Sound and MIDI Software for Linux

http://linux-sound.org/

X-CD-Roast

http://www.xcdroast.org

xine video player

http://xinehq.de/