



Movies and Multimedia

Movie playback is becoming increasingly popular on computers. Modern PCs come equipped with DVD-ROM drives, which, coupled with the right software, can play DVD movie discs. In addition, many web sites feature streaming movie clips or offer them for download.

Ubuntu provides support for movie playback. As with audio playback (discussed in the previous chapter), you'll need to install additional codecs. And just as with audio playback codecs, multimedia applications suggest which movie playback codecs to download and install when you attempt to play unsupported multimedia files. This chapter explains how easy it is to set up Ubuntu for watching videos, DVDs, and TV on your computer, as well as playing web site Flash animations and videos.

Installing Playback Software

Like the other multimedia software provided with Ubuntu, its video playback application, Totem Movie Player, is basic but effective and does the job well. However, because of patenting issues, Totem doesn't support all video formats out of the box. In fact, it supports very few of those you might be used to using under Windows or Macintosh. If you wish to play back the most common video files, such as those listed in Table 19-1, you must install additional software.

Video and audio playback within the Firefox web browser are handled via the Totem browser plug-in, in exactly the same way as the Windows Media Player and QuickTime browser plug-ins work under Windows. This is set up automatically during initial installation of Ubuntu and is also compatible with the GStreamer codec plug-ins once they are installed. However, when you try to retrieve streaming content, many web sites attempt to probe your setup to ensure you have the required media player software, and they balk when unable to find Windows Media Player or QuickTime. This makes playback difficult, although more and more sites are switching to video playback via Flash Player. Additionally, some web sites use Java applets to present content. You can install support for both Flash and Java through Firefox.

Table 19-1. *Popular Movie File Formats*

Format	Typical File Extensions	Web Site	Notes
Windows Media Player 9	.wmv, .wma, .asx, .asf	www.microsoft.com/windows/windowsmedia	Windows Media Player format is the default for most Windows users. Although it's possible to play Windows Media Player files under Ubuntu (files in WMP1, WMP2, and WMP3 formats), you won't be able to play DRM-restricted files (those that rely on the download and installation of a certificate), such as those from the increasing number of movie rental sites.
Real Video	.rm, .ram	www.real.com	By downloading the GStreamer plug-in package when prompted, you can play back Real Video files in Totem. However, you can also download a Linux version of RealPlayer.
QuickTime	.mov, .qt	www.quicktime.com	QuickTime is Apple's default media format and has gained ground on both Windows and Macintosh computers. As with Windows Media Player file playback, you won't be able to play DRM-restricted files.
DivX	.avi, .divx	www.divx.com	The DivX format is one of the most popular formats for those in the Internet community who like to encode their own movies. It's renowned for its ability to shrink movies to very small sizes.

Here, we will cover how to install codecs for movie file formats, as well as how to install the Linux version of RealPlayer and support for Flash and Java.

Installing Codecs

The codecs for video playback are created by the open-source community and are therefore entirely free of copyright issues, but it is claimed some utilize patented technology. As you might expect, this makes for another legally gray area. It's unlikely that the patent holders sanction the distribution of the codecs in countries that allow software to be patented. As with audio playback codecs, you will need to decide whether the caveats shown by Ubuntu during the installation of the codecs apply to you.

Note Most of the movie playback codecs used under Ubuntu are provided by the excellent FFmpeg Project (<http://ffmpeg.mplayerhq.hu/>). This is part of the MPlayer Project, which aims to create an open-source media player and platform, separate from GStreamer or Xine (used under the GNOME and KDE desktops, respectively). However, as with all open-source projects, it is both possible and encouraged to take and reuse just the FFmpeg codec software, which is what the Ubuntu developers have done to bring support for a wide range of movie and audio formats to Ubuntu.

As stated earlier, codec installation for new file formats is automated, just as with audio codecs. In fact, if you followed the instructions to install the MP3 codecs in the previous chapter, including the GStreamer ffmpeg video plugin codec, then your system may already have support for the movie formats. In that case, the video file you've chosen to view will just start playing—you won't be prompted to download anything extra.

Here is the procedure for adding codecs to play a multimedia file:

1. From Nautilus, double-click a movie file.
2. The Totem Movie Player application will start and prompt you to search for a suitable codec. (As noted, the movie will just start playing if you already have the necessary codec.) Click the Search button.
3. Ubuntu will search for the applicable codec. Once it has finished searching, the Install Multimedia Codecs dialog box will appear, prompting you to select from the list of codecs.
4. You can read through the descriptions to know which codec to choose, if more than one is offered. As with audio playback codecs, it's usually a good idea to select all of the codecs offered, to get the broadest range of support. Ubuntu will handle any functionality overlap in the background, so don't worry about installing two or more sets of codecs that seemingly do the same job. Check the options you want and click the Install button.
5. Ubuntu will ask you to confirm the installation of restricted software. Read through the conditions and warnings. If you want to continue, click Confirm. Otherwise, click the Cancel button to choose not to install the codec (meaning that your system will not be able to play the files).
6. Back in the Install Multimedia Codecs dialog box, click the Install button again.

7. Supply your password in the authorization dialog box and click OK to proceed with the installation.
8. Ubuntu will download and install the packages. Once you have been notified that the packages have been installed successfully, click the Close button. At this point, your multimedia file will play in Totem.

Tip When trying to play back QuickTime movies in our tests, we found that a reboot was necessary after the codec was installed. If Totem once again asks you to install the codec when you try to play a QuickTime movie, just click the Cancel button and then reboot. This is probably because QuickTime support is provided by codecs that are still in the process of being developed and can be a little buggy. But after a reboot, you should find that QuickTime movies play back perfectly.

Installing RealPlayer

Installing RealPlayer involves adding a new software repository and then using the Synaptic Package Manager to download and install RealPlayer. The software repository is hosted by Canonical, the company that's the chief sponsor and director of Ubuntu, as a method of providing some useful proprietary extra software. We explain software installation in Chapter 28, but for the moment, it is enough to follow these instructions:

1. Click System ► Administration ► Software Sources.
2. When the Software Sources window appears, click the Third-Party Software tab.
3. Put a check alongside the first entry in the list, which should read `http://archive.canonical.com/ubuntu hardy partner`. Then click Close.
4. You will see a dialog box informing you that the information about available software is out-of-date. Click the Reload button. Once this has completed, the Software Sources dialog box will close automatically.
5. Open the Synaptic Package Manager (System ► Administration ► Synaptic Package Manager) and click the Search button. Search for `realplay`. In the list of results, click the check box alongside the package, and click Mark for Installation. Click the Apply button on the toolbar. Close Synaptic.
6. Click Applications ► Sound and Video ► RealPlayer 10 to start the RealPlayer setup program. Click the Forward button several times to move through the license agreement and information screens.

7. Eventually, you'll be asked if you want to check for updates and configure Mozilla helpers, as shown in Figure 19-1. Ensure both boxes are checked and click OK.

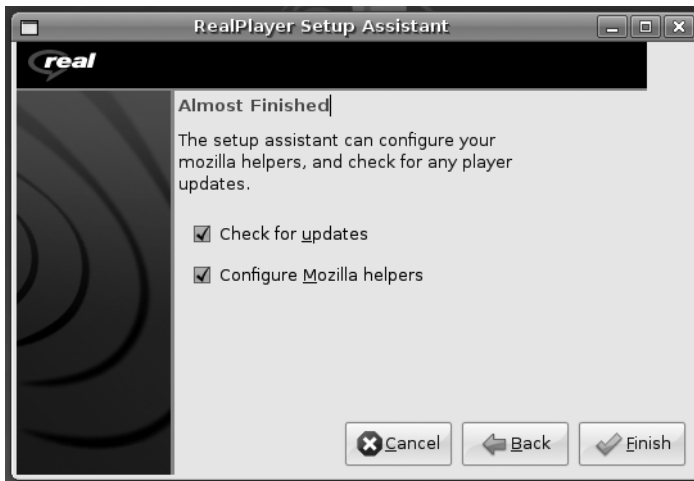


Figure 19-1. After RealPlayer has been installed by a self-installer executable, you must run through its setup program to install the browser plug-in.

8. RealPlayer will start. You can use it or close it.

Tip To see which plug-ins are installed under Firefox, type `about:plugins` in the address bar.

Adding Flash Support

Flash is a multimedia plug-in used for animations, games, and even video playback on web sites. It is a standard requirement on modern Internet-equipped computers, and it's becoming hard to find commercial sites that don't utilize it in some way. For example, YouTube (www.youtube.com) uses Flash for the playback of video files, as shown in Figure 19-2.

Adobe is the originator of the Flash technology and makes a version of its proprietary Flash Player web browser plug-in especially for Linux, which can be easily installed under Ubuntu. You can also select to install one of two open-source Flash players: Swfdec or Gnash. Of the three, Adobe's own Flash Player offers best all-round compatibility with web sites of all kinds—general, video, games, and animations. Swfdec is perhaps the best open-source choice, although it specializes primarily in video playback, such as that offered by YouTube or the BBC (www.bbc.co.uk). Gnash may be the weakest of the three (at the time this book was written), but might be worth investigating if you prefer to use open-source software and find that Swfdec doesn't work correctly with your favorite web sites.

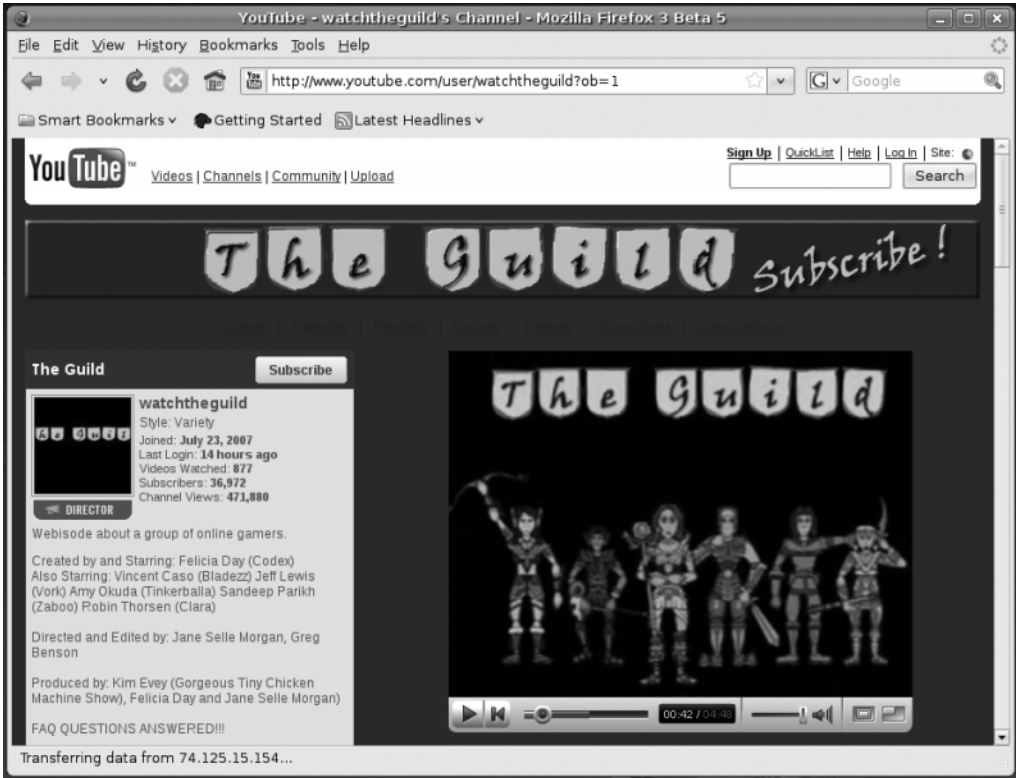


Figure 19-2. *Flash is increasingly popular on video playback sites, such as YouTube.*

Note Sadly, there isn't a Linux version of the Shockwave Director browser plug-in. If you really need to have access to Shockwave sites under Linux, consider using CrossOver Office (www.codeweavers.com) to install the Windows version. But be aware that CrossOver Office is commercial product, and you'll need to pay for it.

Installing a Flash Plug-in

As with multimedia codecs, Flash support is installed on demand and is entirely automated. However, this time, installation takes place from within the Firefox browser, as follows:

1. The first time you visit a web site that uses Flash, a yellow bar will appear at the top of the browser window, informing you that you need to install a missing plug-in. Click the Install Missing Plugins button.
2. In the Plugin Finder Service dialog box, click your choice of plug-in, and then click the Next button.

3. You're asked if you want to install additional software. Click the Yes button.
4. The software is downloaded and installed in the background automatically. Once installation has completed, click the Finish button to close the Plugin Finder Service dialog box. The browser will then display the Flash content.

Removing a Flash Plug-in

If you wish to remove a Flash plug-in, perhaps because it doesn't work correctly and you wish to try an alternative, open the Synaptic Package Manager (System ► Administration) and search for the package: `gnash` to remove Gnash, `swfdec`, to remove Swfdec, or `flashplugin-nonfree` to remove Adobe's Flash Player. Click the check box alongside the entry in the list and select Mark for Removal from the menu that appears. (If you wish to remove Gnash, you'll need to mark both `gnash` and `gnash-common` for removal.) Then click Apply on the main toolbar. Close Synaptic when the removal is complete.

Following this, whenever you visit a site requiring Flash, you will again be prompted to install a Flash plug-in. You can then select a different option from the list.

Adding Java Support

Java is a software platform that some programs use. The intention is that Java is cross-platform, which means that software developed for, say, Microsoft Windows will also work on Linux and Macintosh. Because of this, some web sites use Java applets—small programs embedded into the web page—to present interaction, animation, and even movies.

To access web sites that employ Java applets, you'll need to install Java Runtime software along with a browser plug-in. As with Flash plug-ins, the installation of Java (both runtime and plug-in components) is automated and upon demand. Also, as with Flash, you will have more than one option to choose from: the proprietary Sun versions, the open-source GCJ plug-in, and a variation of the GCJ plug-in that uses OpenJDK.

For compatibility purposes, the Sun Java Runtime version 6 is perhaps the best choice. If you want to install an open-source runtime and plug-in, at the time of writing, reports indicate that GCJ using the OpenJDK plug-in is the best choice. The OpenJDK runtime is Sun's implementation of open-source Java runtime software, so it is supported by the originator of Java and comes with the backing of a major corporation (see <http://openjdk.java.net/>).

As with the Flash plug-in, installation of the Java support is done from Firefox:

1. The first time you visit a web site that uses Java, a yellow bar will appear at the top of the browser window, informing you that you need to install a missing plug-in. Click the Install Missing Plugins button to do so.
2. Select your preferred Java plug-in when prompted and click the Next button.
3. A dialog box prompts you to confirm installing the plug-in. Click Yes.

4. You are prompted for your password, because system changes must be made. Enter your password and click OK.
5. A handful of packages are downloaded. If you opted for the Sun Java Runtime plugins, once download has finished, you're prompted to read and accept the license. Do so, and then click the Forward button.
6. The software is installed and configured automatically. Click the Finish button to finalize the installation once it has completed.
7. When everything is installed, close Firefox and then start it again.

Watching Movies

The Totem Movie Player application (Applications ► Sound and Video ► Movie Player) is used to play back video under Ubuntu, as shown in Figure 19-3.

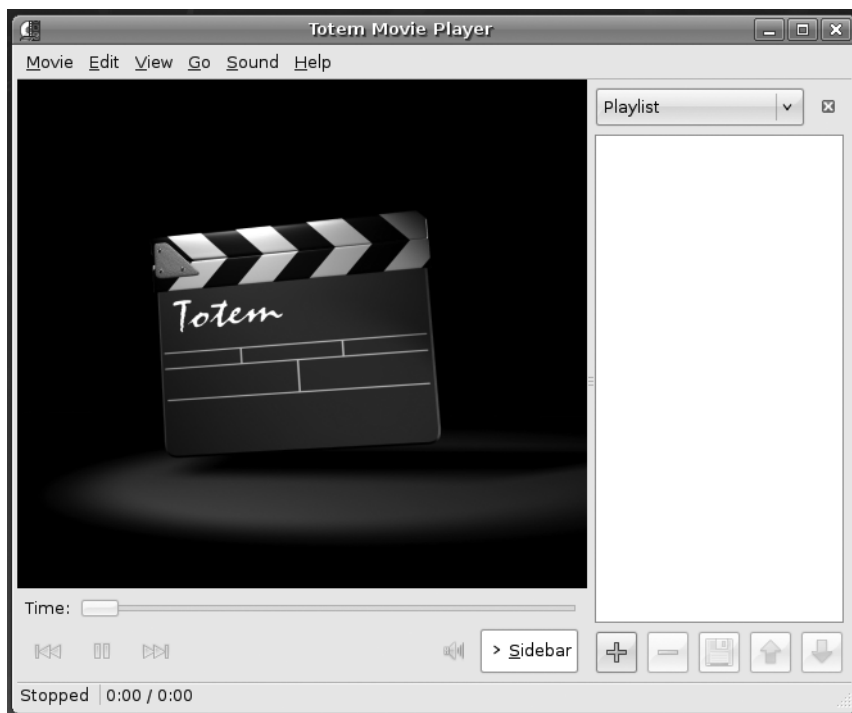


Figure 19-3. Totem handles movie file playback under Ubuntu and is simple but effective.

To play a movie file on your hard disk, simply double-click its icon. This will automatically start Totem and play the video, if Totem has the appropriate codecs, as shown in

Figure 19-4. If not, Totem will suggest which codecs to download and install, as explained earlier in the chapter.

Tip By default, all video files will play in Totem, including RealMedia. To change this so that RealPlayer handles its own file types, right-click any RealPlayer movie file, select Properties, click the Open With tab, and click Add. Locate RealPlayer in the list, click the Add button, and then make sure the radio button alongside RealPlayer is selected.

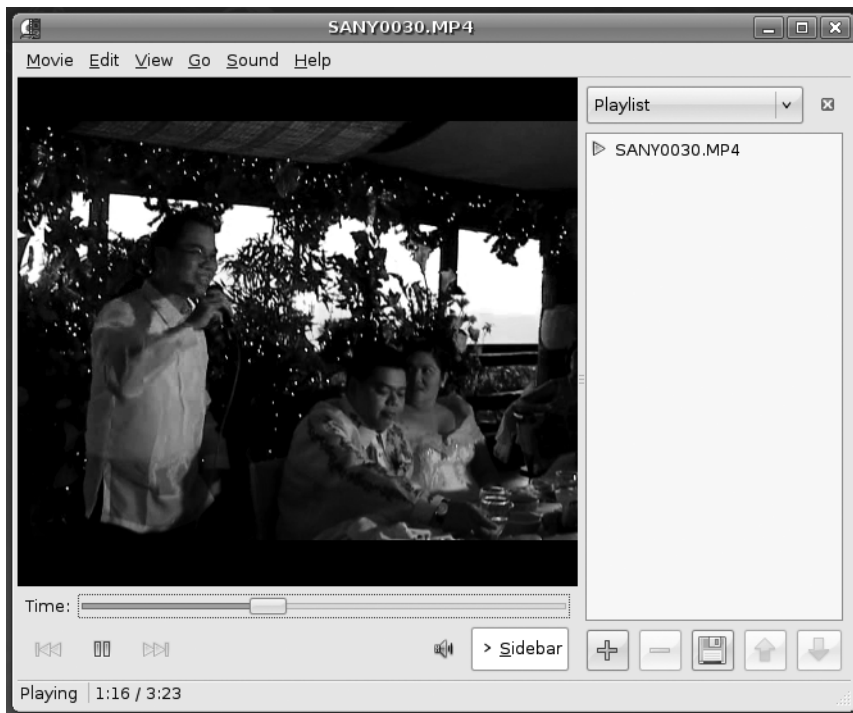


Figure 19-4. Totem can play just about every kind of movie file, such as QuickTime, Windows Media Player, or DivX, as here.

Using Totem is easy, and the interface has only a handful of options. At the bottom-left of the screen are the transport controls that allow you to pause, play, and move forward and backward in the video file. Alternatively, you can right-click the video window and select the controls from there.

Above the controls is the Time bar. You can drag the slider to move through the video, but not all files support this function. You might find that some dragging is allowed, but you're not able to click a new place in the Time bar and have the counter jump to that position.

At the right of the program window is a playlist. You can queue several video files to be played in sequence by simply dragging and dropping movies from a Nautilus file browser window. You can hide the playlist by clicking the Sidebar button. This gives nearly all of Totem's program window to the playback window. To play the video full screen, thereby hiding the desktop and Totem controls, press the F key. To return to the program window, press Esc (or press F again). In full-screen mode, you can start and stop the video by pressing the spacebar.

To adjust the image quality, click Edit ► Preferences, and then click the Display tab in the Preferences dialog box. You can make adjustments by clicking and dragging the Brightness, Contrast, Saturation, and Hue sliders. If a video is playing in the background, the changes will be shown as you make them.

Tip If you find you have problems with video playback, such as Totem showing an error message about another application using the video output, try the following: click System ► Preferences ► Terminal, and at the prompt, type `gststreamer-properties`. Click the Video tab, and in the Plugin drop-down list under Default Output, select Xwindows (No XV).

OPEN-SOURCE MOVIE FILE FORMATS

A number of promising open-source movie file formats are in development. Some are more mature than others, but few see widespread use at the moment. All promise much for the future. Many consider the following three formats the chief contenders:

- Xvid (www.xvid.org) is a reworking of the popular DivX MPEG-4-based file format. Unfortunately, Xvid uses technology covered by patents in some parts of the world, so the project exists in a legally gray area. Xvid is able to encode movies to relatively small file sizes (a 90-minute movie can fit on a CD). Despite small file sizes, it can maintain good image and sound quality. In theory, it should also be possible to play Xvid movies using any MPEG-4 codec, such as DivX or QuickTime.
- Ogg Theora (www.theora.org) is being developed by the Xiph.org Foundation, the people behind the Ogg Vorbis audio codec project that's a favorite among Linux users. As such, it promises to be a completely open-source project. Although the technology is covered by patents, Xiph.org has promised never to enforce them, meaning that anyone in the world can use Theora without charge. At the time of this writing, Theora has been released as a beta, but it will almost certainly become the open-source video codec of choice in the future.
- The British Broadcasting Corporation (www.bbc.co.uk), the UK's largest public service broadcaster, is sponsoring development of the Dirac codec (see <http://schrodinger.sourceforge.net>). Dirac is less developed than both Theora and Xvid at present, and it is aimed more at the broadcast/enthusiast market. For example, it is designed to support high-definition TV. However, it's certainly one to watch.

Watching DVDs

As explained in Chapter 18, DVD movie discs are protected by a form of DRM called CSS. This forces anyone who would like to create DVD playback software or hardware to pay a fee to the DVD Copy Control Association, an industry organization set up to protect DVD movie technology.

Nearly all Linux advocates are scornful of any kind of DRM system. It isn't possible to buy stand-alone licensed DVD playback software for Linux, but even if it were, few would be willing to support what they see as prohibitive software technology.

Some open-source advocates reverse-engineered DVD protection and came up with the DeCSS software. This bypasses the CSS system and allows the playback of DVD movies under practically any operating system. Sadly, DeCSS is caught in a legal quagmire. The Motion Picture Association of America (MPAA) has attempted to stop its distribution within the United States but has failed. Some experts suggest that distributing DeCSS breaks copyright laws, but there has yet to be a case anywhere in the world that proves this. Nor has there been a case proving or even suggesting that using DeCSS is in any way illegal.

Ubuntu doesn't come with DeCSS installed by default, but you can download and install the software by issuing a simple command, following the installation of a software package. Here is the procedure:

1. Select System ► Administration ► Synaptic Package Manager.
2. Click Search, and search for `libdvdread3`. In the list of results, click the check box alongside the package and click Mark for Installation. Click Apply on the main toolbar. Close Synaptic.
3. Open a terminal window (Applications ► Accessories ► Terminal). Type the following in the terminal window to download and install the DeCSS component:

```
sudo /usr/share/doc/libdvdread3/install-css.sh
```

4. Once the command has completed, you can close the terminal window.

Note You must ensure Synaptic and also Update Manager are closed before typing the command to install the DeCSS software. It will fail if either program is running.

After you've installed DeCSS, just insert a DVD, and Totem will automatically start playing it, as shown in Figure 19-5.

Note If the relevant codecs aren't installed when you insert a DVD, you will be prompted to install them, as with all kinds of multimedia file playback.

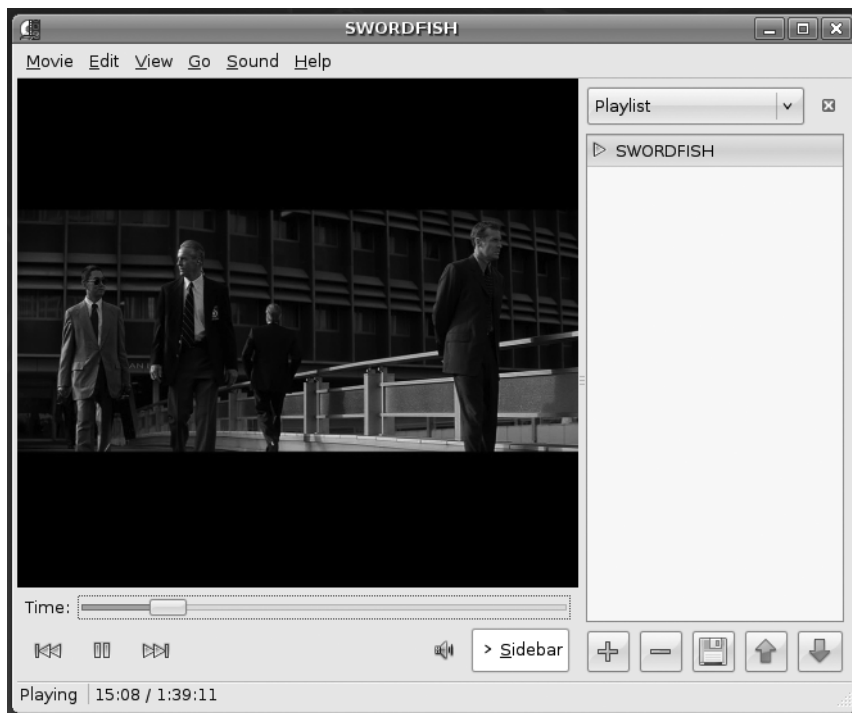


Figure 19-5. Just insert a DVD in your computer, and it will automatically play in Totem.

If the movie doesn't start playing automatically, double-click the disc's icon on the desktop. In the Nautilus file browser window, click the Open Movie Player button.

Unfortunately, there is a slight limitation to playing DVD movies within Totem: the chapter menu will not work, so you will not be able to navigate from chapter to chapter in the disc. Additionally, in our tests, we noticed that DVD playback could be a little glitchy. To get around both these issues, you can install the `totem-xine` package. This installs a separate but otherwise identical version of the Totem Movie Player that utilizes the Xine multimedia framework (Chapter 18 explains what a multimedia framework is). Then you will be able to choose between using the standard version of Totem, which relies on the GStreamer multimedia framework, or the Xine version of Totem. Installing the `totem-xine` package also installs Xine versions of the codecs you need for virtually all multimedia file playback, meaning no extra configuration is necessary.

Note You might be wondering why we didn't just advise you to install `totem-xine` back at the beginning of this chapter, if it installs all the codecs you need. The method we recommend installs codecs for the GStreamer multimedia framework, rather than just Totem. GStreamer is used by *all* of the GNOME desktop multimedia software. This means that if you install a different GNOME movie player in the future, it will automatically have support for all the file formats you've already added to Ubuntu. In contrast, the `totem-xine` package is rather self-contained and installs codecs for only the Xine framework, which isn't supported elsewhere under Ubuntu (but is the default framework under KDE).

To install the `totem-xine` package, start the Synaptic Package Manager (System ► Administration) and click the Search button. Search for `totem-xine`. Click the check box alongside the entry in the results list and select to install it. As you'll see from the warning dialog box, installing `totem-xine` also installs a lot of other packages, including the necessary codecs for playback of virtually all multimedia files. This is fine.

From now on, you'll need to run the Xine version of Totem to play DVD movies. You'll have to do this before you insert the DVD movie disc, to avoid the standard version of Totem attempting to play it. To run the Xine version of Totem, you can use either of these methods:

Run it from a terminal window: Click Applications ► Accessories ► Terminal and type `nohup totem-xine`.

Create a new launcher: Right-click the desktop, select Create Launcher, and in the Command text box, type `totem-xine`. In the Name box, type something like Totem (Xine) for easy identification, and then click OK.

Tip To find out which version of Totem you're using—GStreamer or Xine—click Help ► About in Totem. You'll see either "Movie Player using xine-lib," in the case of Xine, or "Movie Player using GStreamer," in the case of GStreamer.

MOVIE EDITING

The field of Linux movie-editing software is developing, and only a handful of programs are available for the nonprofessional user. One of the best is Kino (www.kinodv.org), which is available in the Ubuntu software archives. Although far from being a professional-level program, Kino allows competent users to import and edit videos, apply effects, and then output in either MPEG-1 or MPEG-2 format.

If you're looking for something more powerful, but also more complicated, then Cinelerra is worth a look (<http://heroinewarrior.com/cinelerra.php3>). Just follow the instructions at http://cvs.cinelerra.org/getting_cinelerra.php#hardy to install a version of Cinelerra for Ubuntu.

Incidentally, professional moviemakers use Linux all the time, particularly when it comes to adding special effects to movies. Movies like *Shrek 2*, *Stuart Little*, and the *Harry Potter* series all benefited from the CinePaint software running under Linux! For more details, see www.cinepaint.org.

Watching TV

If you have a TV card, you may be able to use it to watch TV under Ubuntu. Ubuntu doesn't come with a TV tuner application by default, but you can download the tvtime program from the software repositories using the Synaptic Package Manager.

Checking for Video Input

Ubuntu includes the Video for Linux project, an extension to the Linux kernel to allow many popular TV and video-capture cards to work. You can find out if yours is compatible by opening a terminal window (Applications ► Accessories ► Terminal) and typing `gststreamer-properties`. In the dialog box that appears, click the Video tab, and click the Test button in the Default Input part of the window. If you see a video window without an error message, then your TV card is compatible. If you receive an error message, then your card probably isn't compatible.

Note Getting Video for Linux to work can be troublesome, but there are a lot of resources out there to help. You can start by visiting www.linuxtv.org and www.exploits.org/v4l/.

Installing tvtime

To download and install tvtime, open the Synaptic Package Manager (System ► Administration), click the Search button, and enter `tvtime` as a search term. In the list of results, click the entry for the package, mark it for installation, and then click Apply.

When the download has completed, you'll be asked a number of questions during the configuration process. First, you need to choose your TV picture format. Users in the United States should choose NTSC. Users in the United Kingdom, Australia, and certain parts of Europe should choose PAL. To find out which TV system your country uses, look up your country at www.videouniversity.com/standard.htm. You also need to choose your geographical area from the list so that tvtime can set the correct radio frequency range for your TV card.

Once the program is installed, you'll find it on the Applications ► Sound & Video menu. Using the program is straightforward, but if you need guidance, visit the program's web site at <http://tvtime.sourceforge.net>.

■ **Tip** If you're interested in setting up a low-cost personal video recorder (PVR) and entertainment system, you may want to install MythTV using the Synaptic Package Manager. For more information, check out *Practical MythTV: Building a PVR and Media Center PC* by Stewart Smith and Michael Still (1-59059-779-6; Apress, 2007).

Summary

In this chapter, we looked how you can watch movies on your PC. You've seen how you can update Ubuntu to work with the most popular digital video technologies, such as Windows Media Player and QuickTime.

In addition, we looked at how you can view online multimedia such as Flash animations on your computer, and discussed how you can watch TV on your PC.

In the next chapter, we take a look at image editing under Ubuntu. You'll learn about one of the crown jewels of the Linux software scene: GIMP.