Running Windows programs on Ubuntu with Wine

WINE IMPORTER

Shanna Korby, Fotolia

Users who move from Windows to Ubuntu often miss some of their favorite programs and games. Wouldn't it be practical to run Windows applications on the free Ubuntu operating system? Time for a little taste of Wine. **BY TIM SCHÜRMANN**

Many Ubuntu migrants miss games and graphics programs such as CorelDRAW or products such as Adobe Photoshop. The only solution is to install Windows parallel to Ubuntu – or try Wine, which tricks applications into believing they are running on a Windows system.

The history of Wine goes back to the year 1993. At the time, Sun developed a small tool to run Windows applications on its own Solaris operating system, without the need for a Windows license or other interaction. This software inspired Bob Amstadt and Eric Youngdale to develop something similar for Linux. A short while later, the first version of Wine was released. Today, more than 300 volunteer programmers from all over the world continue to contribute to the Wine project.

What's in a Name?

To run Windows programs on Ubuntu, Wine uses a fairly complex trick: It sits between the Windows application and Ubuntu like a simultaneous interpreter. If the Windows application says: "Draw a button," Wine passes this command directly to Ubuntu. In contrast to VirtualBox or VMware, Wine does not emulate a whole PC and thus cannot be considered a real emulator. This also explains the name Wine, which means Wine Is Not an Emulator.

Because of the way Wine works, it offers a number of advantages. Chiefly, you do not need an expensive Windows license. Programs will run almost as fast as on the Redmond operating system, and windows behave as if they belong to a native Ubuntu program.

An interpreter can only be as good as its knowledge of the two languages, and therein lies the problem: Because Micro-

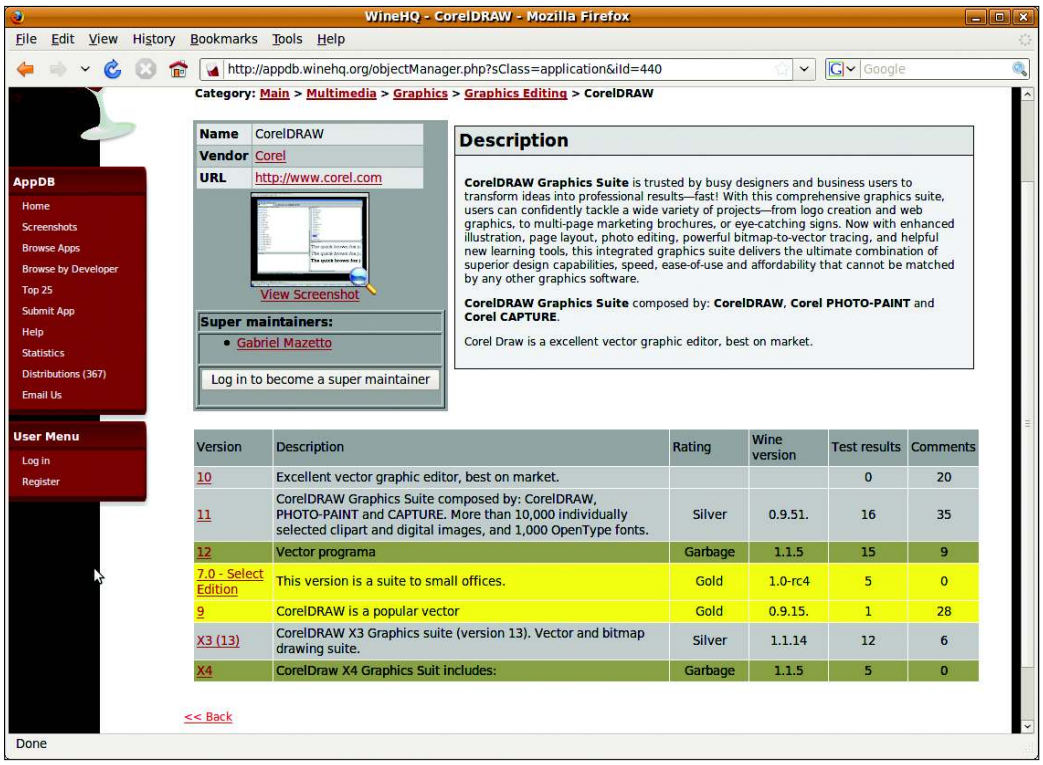

Figure 1: The Wine database lists numerous applications that run on Wine – for example, the CorelDRAW graphics package.

soft refused to release details of its operating system until just recently, Wine developers were forced to adopt a trial and error approach. Such a method involves time-consuming, painstaking work, and considering the multiple-gigabyte operating system monster they were facing, it was very much a labor of Sisyphus. On top of this, some software manufacturers use some pretty nasty programming tricks, and if you want to talk these applications into running on Ubuntu, Wine needs to know these tricks. Unfortunately, most software vendors keep this kind of information safely under lock and key.

Despite years of work, then, Wine is still officially under development, and most of the work taking place now is going into the fields of multimedia, video, and 3D graphics. This said, Wine does support DirectX 8 and 9 quite well by now. The developers started work on the tenth incarnation of this critical graphics interface for games last year. An additional limitation is that Wine can only handle very simple 32-bit Windows applications, although improved support for 64-bit software is being worked on even now.

Wine has another disadvantage: It can only handle Windows applications; it cannot revitalize hardware with Windows-only driver support.

Preparation

Before you fire up your package manager and launch into the Wine install, you might want to take a look at the application database on the Wine homepage [1]. This database summarizes the level of support for various Windows programs: whether or not they run on Wine and, if so, how well behaved they are. To access the database, go to the Wine homepage and, from among the tabs at the top, click *AppDB*. In the *AppDB* area on the left, select *Browse Apps*, go through the drop-down list labeled *Category* until you find the category and application you are interested in, and click on *Update filter*. CorelDRAW and Photoshop are hidden below *Multimedia* | *Graphics* | *Graphics Editing*, for example. Alternatively, use the search function to find your application in the database.

If you decide to investigate CorelDRAW, you are taken to the page shown in Figure 1, where you will find ratings for different versions that tell you how well the program fared in tests performed by Wine users. The *Platinum* rating is only awarded if a program runs without errors and without any impairment to functionality on Wine. A couple of older CorelDRAW versions have made *Gold* status; the current X4 version refuses to cooperate entirely (*Garbage*). Adobe Photoshop CS2 will run more or less as the makers intended, whereas the current CS3 version has reached only *Bronze* status. Things are even worse in the case of Adobe Illustrator. As a rule of thumb, the older a program is, the better your chances are of getting it to work.

A Wrench in the Works

Clicking on a program version tells you exactly what the trouble is. A new window appears with details of what does and doesn't perform as expected. In addition, user reports at the bottom and tips for talking the program into cooperating can be very useful. The steps this requires, some of which are very complex, are something you should not attempt unless you are an experi-

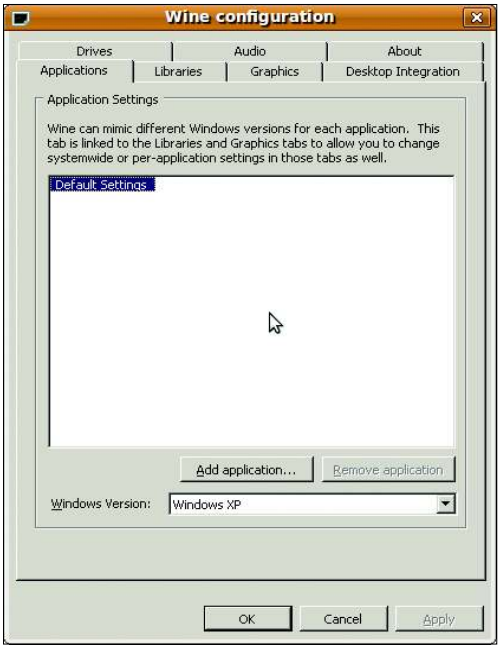

Figure 2: This window shows you the current Wine settings.

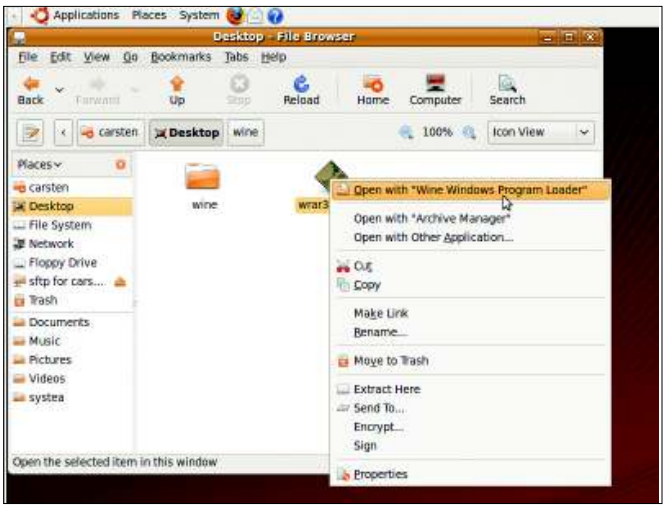

Figure 3: Start the Windows application installation file using Wine.

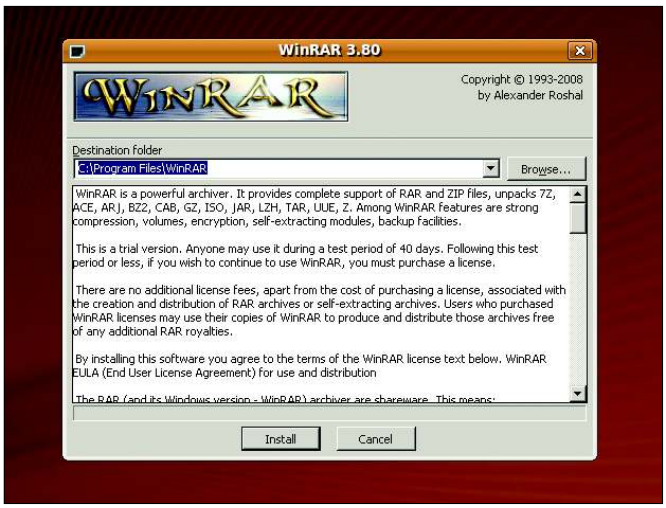

Figure 5: Installing WinRAR with Wine.

enced Ubuntu user. In some cases, programs refuse to work because Internet Explorer is missing; for example, Lexware accounting software relies on Internet Explorer for some operations.

If your application is still listed as broken in the database, you should check the test date (in *Test Results*). If the test was a while back, you might want to experiment yourself. Wine continues to mature, and it is conceivable that your application has been taken care of.

Once you have established that your Windows application is likely to run on Wine, you need an installation disc for the Windows application. Although Wine is free of charge, you need a valid license for the Windows application.

Installation

Wine is included with Ubuntu and you can retrieve it from a repository. First, Launch *System* | *Administration* | *Synaptic Package Manager*, enter your password in the resulting dialog, then type *wine* in the search box and click *Search*. In the list of results, mark the *wine* entry for installation. Synaptic will present a list of additionally required changes. Now confirm these with *Mark* and start the installation by clicking *Apply*.

Figure 4: Choose "Open With" and select "Wine Windows Program Loader" for Windows applications.

Preparations

Wine integrates with the desktop start menu. To launch Wine, click on *Applications* | *Wine* | *Configure Wine*.

The Wine Configuration tool will then go on to create a hidden *.wine* directory below your home directory. The software uses this directory to store the basic configuration, which you can see in Figure 2. Right now, do not modify anything here, but click *Cancel* to close the tool.

Installing a Windows Program

To take Wine for a test run, download the WinRAR packer [2], then open the file manager. Next, locate the file and

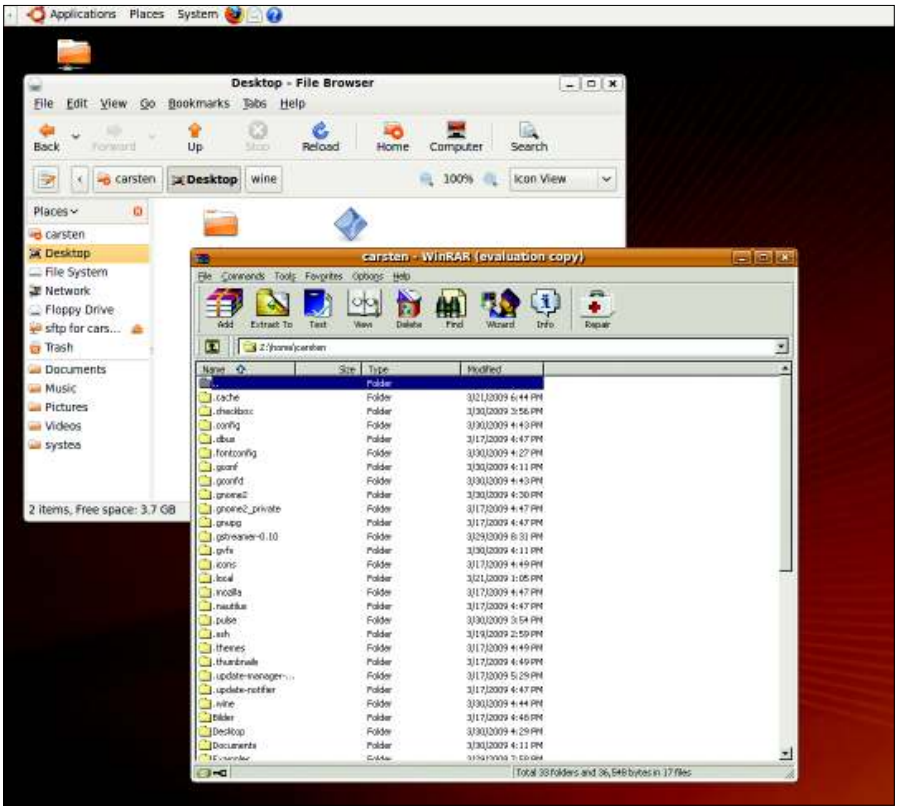

Figure 6: The Windows application WinRAR running on the Ubuntu desktop.

start the installer by double-clicking on it. Alternatively, choose *Open with "Wine Windows Program Loader"* from the context menu, which opens after a right-click on any file (Figure 3).

In WinRAR's case, the self-extracting file *wrar380.exe* automatically executes the installer. In other cases, you might need to look for the installer for the Windows application in an archive file: It will typically be *setup.exe*, or *autorun.exe*.

If Wine does not launch automatically after double-clicking on the installer, you should choose *Open with Other Application...* (Figure 3), then choose *Wine Windows Program Loader* in the window shown in Figure 4. Now you just need to click *Open*.

Wine takes over in the background and launches the Windows program. Just follow the normal steps to install the program. Although I talk about Windows drive letters in the next section, for now, confirm the default installation directory suggested by the application (Figure 5). If any installer asks you to reboot Windows, press Alt+F2, type *wineboot*, and click *Run*. This tells Wine to simulate a Windows reboot. Figure 6 shows how a Windows program looks running in Wine. If Wine does not launch the Windows program, check out the "Dead as a Dodo" box.

If the installation program creates one or multiple entries in the start menu, Ubuntu places them below *Applications | Wine | Programs*. If so, you can use the entries as a convenient method for launching the Windows program.

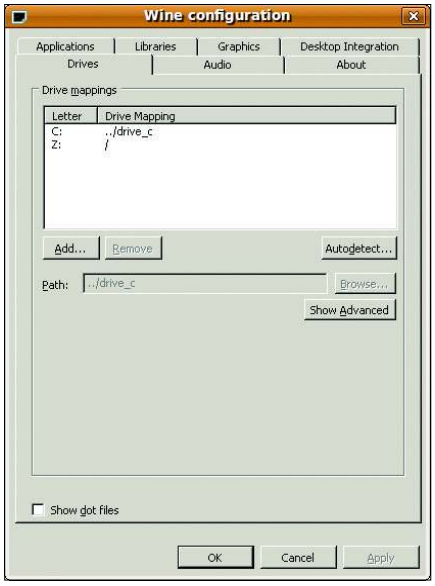

Figure 7: The Drives tab lets you map Linux directories to drive letters.

Figure 8: Wine has a graceful approach to uninstalling Windows programs.

Tell Me Your Name

By default, Wine stores Windows programs that think they are installing on drive *C:* in a hidden subdirectory below your home directory. To display the hidden files, select *View | Show Hidden Files* in the Nautilus file browser, then change directory to *.wine* in your home directory. One level below is a *drive_c* subdirectory and below this, *Program Files* and *Windows*. The former contains the application you just installed. After the WinRAR installation, it will contain a folder with this name with all the application files. To start WinRAR, double-click the file *WinRAR.exe* in its folder. Also, you can run Windows applications from a terminal window by entering *wine* and the executable's file name.

Directory Jungle

Unlike Windows, Ubuntu does not use drive letters, so Wine must use a workaround: Each drive letter maps to an Ubuntu directory. Although a Windows program running on Wine thinks it is storing data on drive *C:*, it is writing to a subdirectory called *.wine/drive_c* below the home directory. The Wine control center shows which letter maps to which directory. First choose *Applications | Wine | Configure Wine* or type *winecfg* in a quick launcher (Alt+F2). Then visit the *Drives* tab (Figure 7). The list at the top shows you which drive letter maps to which Ubuntu directory. Normally, *C:* maps to *.wine/drive_c*, and *Z:* lets the Windows application access the whole directory tree because it maps to the root directory. Here, you can *Add* mappings by defining new virtual drive letters and typing the *Path* to which the letter should point.

VistaXP 98

Some Windows programs require the characteristics of a specific version of Windows. The *Applications* tab can help you cater to this.

Dead as a Dodo

If a Windows program fails to launch when you click it, some manual attention might make it see reason. To start, open a terminal window. Then, select *Application | Accessories | Terminal* in the start menu. Now type

```
cd directory
```

where *directory* represents the full path to your installation program. If the *setup.exe* file is on a DVD, you can access the DVD via the */media/* path. The command line looks like this:

```
cd /media/DVD_name
```

In this command, replace *DVD_name* with the entry in your *media* directory, then climb down the directory tree until you find the directory with the *.exe* file you need (in WinRAR's case, this is */programs/other/winrar*). When you get there, type

```
wine file
```

replacing *file* with the name of the application you want to run, say, *setup.exe*. Make sure you stick to the exact spelling, remembering that upper- and lowercase letters are vital. To tell Wine to run the Windows program, press Enter again.

If you experience difficulty launching the program, check the terminal window for error messages – you should not close the terminal window or you will terminate the Windows program running in it. If the Windows program crashes, you can try relaunching it.

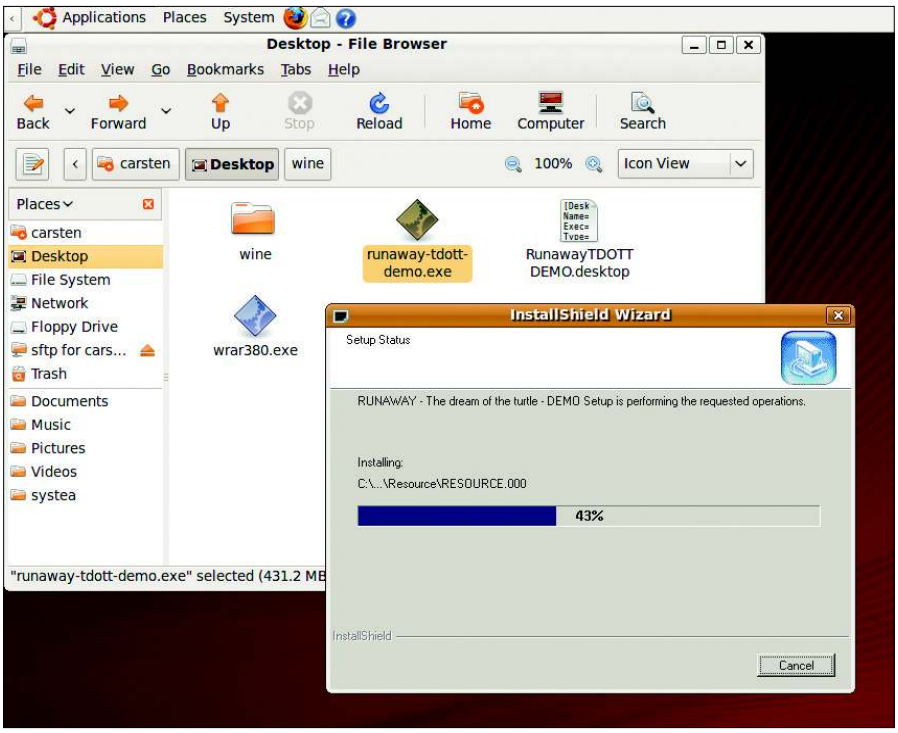

Figure 9: Some Windows games, such as Adventure Runaway, ...

For each application, you can individually define the Windows version that Wine should emulate. To do so, click *Add application* and look for the executable for your application (in *.wine/drive_c*).

Now click *Open*, select the application in the list, and then select the required version of Windows in the *Windows Version* drop-down list. The configuration in *Default Settings* is valid for all Windows applications, unless you define an exception.

Garbage Collection

To get rid of a Windows application you have installed on Ubuntu, you might think it would suffice to delete the corresponding directory below *.wine/drive_c/Program Files*.

However, Wine will still list the application as installed. Instead, run *Applications | Wine | Uninstall Wine Software* or press Alt+F2 and type *uninstaller*. Now you should see the window in Figure 8. When you get there, select the software you want to delete and click *Uninstall*.

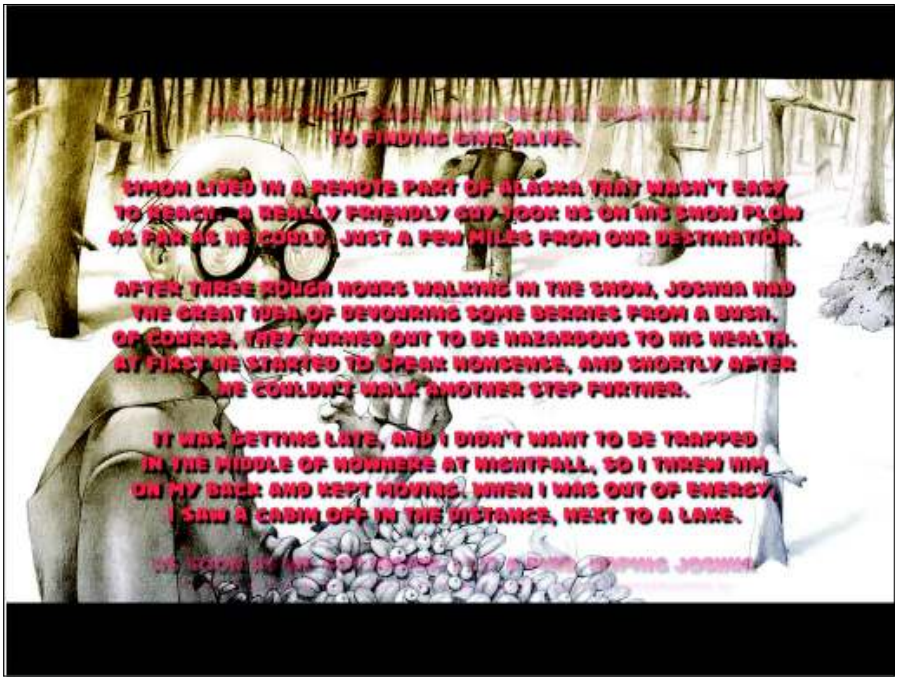

Figure 10: ... run on Linux thanks to Wine.

Conclusions

Wine is not a panacea, and many major programs still refuse to cooperate. Your best chances are with games (see Figures 9 and 10), but you might need to do without popular accounting packages, CorelDRAW, the latest version of Photoshop, or iTunes, for example.

A better alternative might be to look around for an Ubuntu program that provides similar functionality. In the case of Photoshop, why not try GIMP or Krita? And OpenOffice has long been a more than adequate replacement for Microsoft's Office suite. If you check out the list of packages in your distribution's package manager, you might be surprised at the number of comparable programs, or even programs with superior features, that Ubuntu offers. ■

Apps Gone Bad

The Wine MIT license gives users many privileges, a fact that has helped TransGaming generate huge profits. TransGaming just grabbed the package, added DirectX capabilities, which are required for gaming, and started to sell the results as Cedega [3] (formerly WineX). The Wine developers were unhappy about this, and thus changed the licensing terms to the LGPL in March 2002. The LGPL ensures that you can continue to use Wine for commercial purposes, but that changes and additions must be given back to the project. CodeWeavers is exemplary in this respect; the company bundled Wine with its own commercial components to create the CrossOver [4] package, while actively promoting the ongoing development of Wine.

INFO

[1] Wine Project homepage: *http://www.winehq.org*

[2] WinRAR archiver homepage: *http://www.rarsoft.com*

[3] Cedega website: *http://www.cedega.com*

[4] CrossOver Linux: *http://www.codeweavers.com/products/cxlinux/*