CrossOver Games Users Guide

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Contents

Chapter 1

Introduction

CrossOver Games allows you to run your favorite Windows games on Linux. CrossOver Games is tested for performance with many games such as Guild Wars, Eve Online, and Steam games like Half-Life 2 and Portal. It also works well with a wide variety of other 3D and 2D games.

CrossOver Games is easy to install, and requires a small footprint on the system. Its minimum requirements are as follows:

- An x86 based Linux distribution based on glibc 2.3 or greater

- Perl 5 or greater

- IJG JPEG library (libjpeg)

- Python 2.4

- gtk 2.10

- pygtk 2.10

- It is also recommended that you have a web browser installed.

- 40MB of available disk space (plus space for the Windows applications)

- 64MB of RAM

Chapter 2

Installing CrossOver Games

CrossOver Games can be installed via Debian or RPM package-management systems. In addition, you can install using our graphical installer. This installer is especially useful if you wish to install in a single user account.

Upgrading To upgrade, simply run the installer for the new version and it will upgrade CrossOver while preserving your settings as well as any application already installed. Note, however, that it is highly recommended to uninstall CrossOver before switching between different installation modes.

2.1 Choosing an installation mode

You can install CrossOver Games in two different modes. The installation mode will determine who can run CrossOver, where Windows software is installed, and who can run each Windows application.

2.1.1 User mode

When installed as a single user, the CrossOver environment will be set up for one account only. Only that user will be able to install and use Windows applications.

If you are installing CrossOver on a personal computer for private use, you should use this installation mode. It is the easiest, simplest, and safest installation method.

File locations The CrossOver application will be installed in `~/cxgames`. Windows applications and configuration files will be placed in `~/.cxgames`.

How to install Log in as the user who will be using CrossOver and locate the installation script. It will usually be called `install-crossover-games-10.0.0.bin` but may have a different name, especially if you downloaded it. Once you have found the installer, run it as follows:

```
$ sh install-crossover-games-10.0.0.bin
```

Tip
User mode is only available via the graphical (.bin) installer. Debian and RPM installations can only be completed system-wide.

2.1.2 Private multi-user mode

Private multi-user mode allows you to install CrossOver so that each user on the system can install and run the Windows software of his or her choosing. Each user will have their own set of private bottles.

If you are installing CrossOver for use by multiple users, you should use this installation mode. New users are easy to add, and corrupt or unwanted Windows environments can be easily erased or replaced.

File locations The CrossOver application will be installed in `/opt/cxgames`. Each user's bottles will be placed in `~/.cxgames`.

How to install Log in as root and locate the installation script. It will usually be called `install-crossover-games-10.0.0.bin` but may have a different name, especially if you downloaded it. Once you have found the installer, run it as follows:

```
$ su -
# sh install-crossover-games-10.0.0.bin
```

Once the installation completes, click Exit. Now, when a user runs CrossOver for the first time, a new Windows environment will be created for that user with an empty C: drive. Users can install Windows software by running the Bottle Manager.

Tip

Installing Windows applications as root in this install mode is almost certainly pointless. These applications will be usable by root and root alone.

Chapter 3

Unlocking the Demo version of CrossOver

The demo version of CrossOver has all the functions and features of the full version. Any windows software that works on a full version will also run in the demo version, and vice versa. The important limitation of the demo version is that bottles can only be used for 7 days. This means that any Windows packages that you install using the demo version will cease to work no more than 7 days after their installation.

CrossOver will warn you periodically of the approaching expiration.

When a demo installation is unlocked, all existing bottles and applications are unlocked as well. To unlock a demo, you must have a support account with CodeWeavers. You can purchase CrossOver licenses and support contracts from the vendor that provided you with your demo or directly from the CodeWeavers store. During purchase you will be asked to provide an email address and password. This address and password will be used to unlock your demo install.

Once you have an account and a password, you can unlock CrossOver by running the registration tool. You can do this by clicking Register anytime CrossOver displays a demo warning. Or, you can run the tool directly by selecting Register and unlock this demo from the CrossOver menu.

Tip
Some versions of CrossOver Games do not have a Register button. To unlock these versions of you must download an unlocked version of CrossOver and install it, replacing the existing demo version. Your bottles and applications will not be altered during this reinstallation.
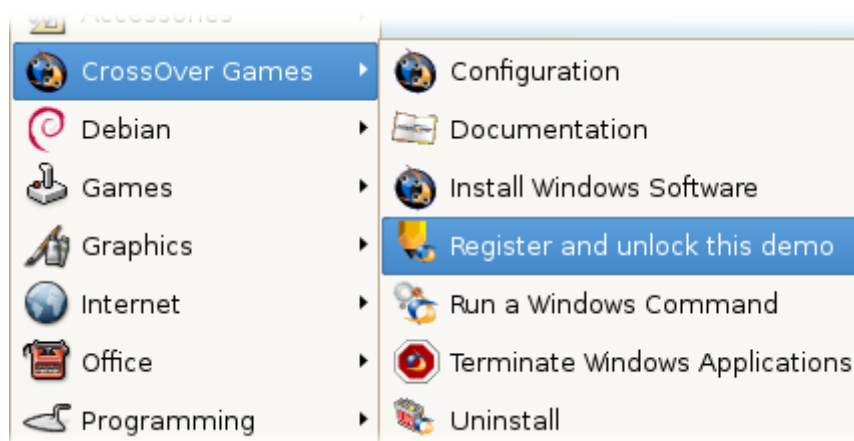
Tip

Some trail versions of CrossOver do not display the Register menu. If you are missing this menu entry, or you are using a Linux distribution that does not support menus, you can run the registration tool from the command-line, like this:

```
$ ~/cxgames/bin/cxregister
```

Enter your email address and password into the registration tool, and click Register.

CrossOver will connect to a CodeWeavers server and unlock your installation.

After unlocking, all your bottles and Windows applications will be re-enabled. The Register and unlock this demo option will be removed from your menu.

Chapter 4

Installing Windows Software

4.1 Installing Software using the CrossOver Software Installer

The CrossOver Software Installer guides you through the process of installing Windows software. It can be launched from your system menu via the Install Windows Software option, or it can be run from the command-line, like this:

```
$ ~/cxgames/bin/cxinstaller
```

The Installer can also be launched from the CrossOver installer by clicking on the Install Windows Software button.

Tip

The CrossOver Software Installer contains extensive knowledge about the specific conditions and parameters that make applications install and run. When software is installed without using the Installer (for instance by running Wine directly) or when the Installer is misinformed about what's being installed (for example if one application is installed when a different one has been selected from the selection panel) the installer behavior may be imperfect, and subsequent application behavior may be less reliable.


4.1.1 Choosing what to install

The first panel displays a list of applications that CrossOver knows how to install. To install a program, select its name from the list and proceed to the next panel.

In many cases (especially for downloadable software) the Installer will immediately display the Install button. This means that it was able to compute good default values for the other panels in the Installer and is ready to begin. You may browse settings in the other panels by clicking on the title bars of each section, or proceed with a default install by clicking Install.

If the Installer requires more information before installing, it will display a Proceed button. Clicking Proceed will result in a prompt for the next bit of necessary information. At any point you may adjust your selections by selecting any section of the Installer.
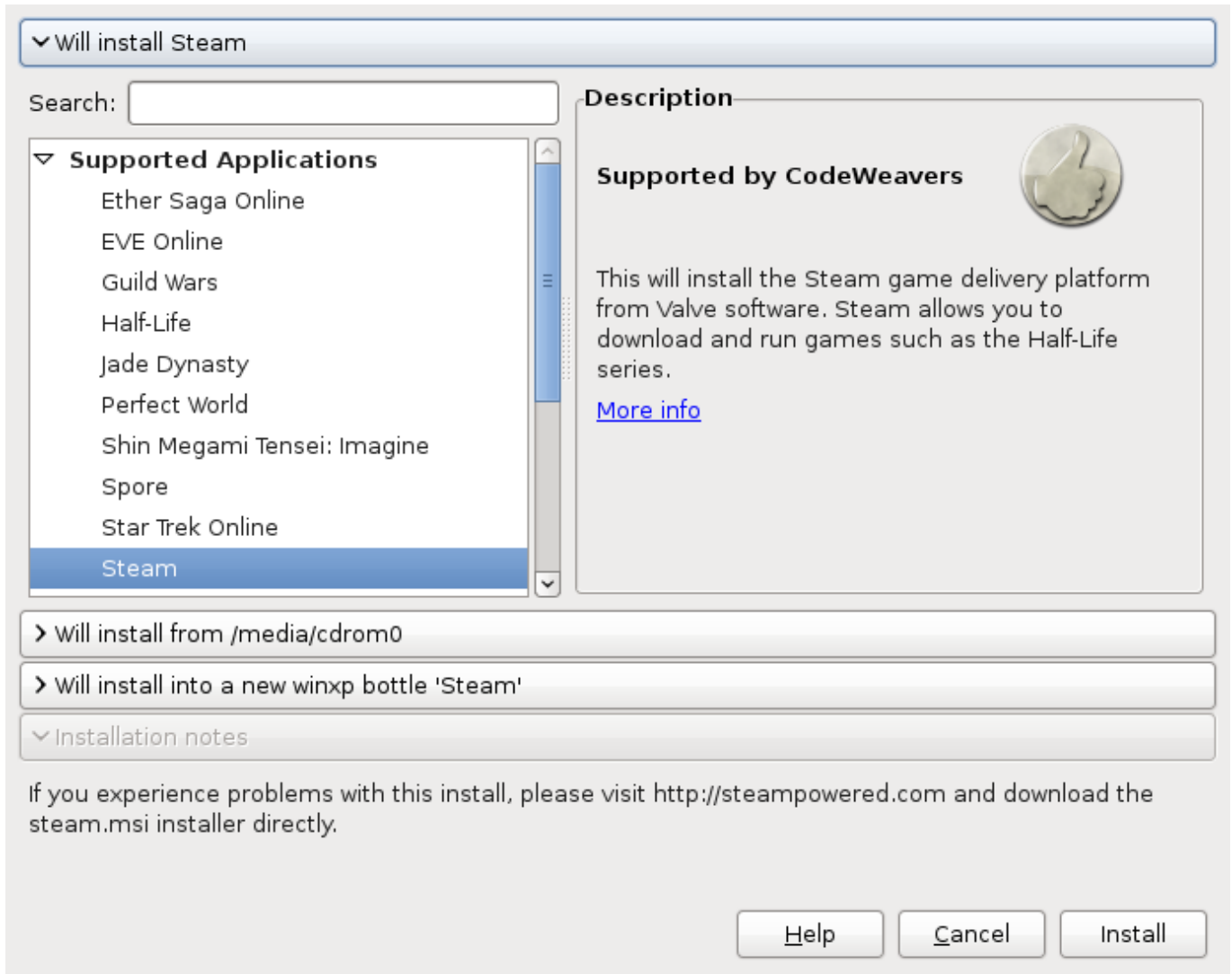
Supported Applications CrossOver has been tested and tuned to optimize the behavior of this select list of applications. CrossOver tech support will also provide assistance when difficulties arise with these programs.

Community Supported Applications The users of the CodeWeavers CrossOver Compatibility Center have contributed installation strategies for a small but growing list of applications. These programs are not officially supported by CodeWeavers, but help may be available in the Compatibility Center forums.

Other Application If you wish to install software that is not otherwise listed, you may do that by selecting the Other Application option. Keep in mind, though, that unsupported software may work poorly or not at all. In addition, installing unsupported software may prevent already installed supported Windows applications from working. It is generally recommended that unsupported applications be installed in a new bottle for testing purposes.

Before installing an unlisted application, you may benefit from looking it up in the CodeWeavers CrossOver Compatibility Center for tips and tricks.

Service Packs and Upgrades Many applications require downloadable service packs to be applied for best performance. The advisability of each package is indicated by the medal rating.

Runtime Support Components In most cases you will not want to install the software in this section manually. Many of these packages are requirements for the successful install of supported applications, and will be automatically installed as part of the predetermined install process.

> **Important**
>
> If a specific bottle has not been previously selected, the CrossOver Software Installer will install new software into a new bottle whenever possible. If CrossOver detects conflicts between the selected package and the default bottle, the bottle panel will guide your installation into a more appropriate bottle.

4.1.2 Selecting an installation source

When installing software from a CD or DVD, the CrossOver Software Installer will allow you to pick a volume, file or directory to use as the installer.
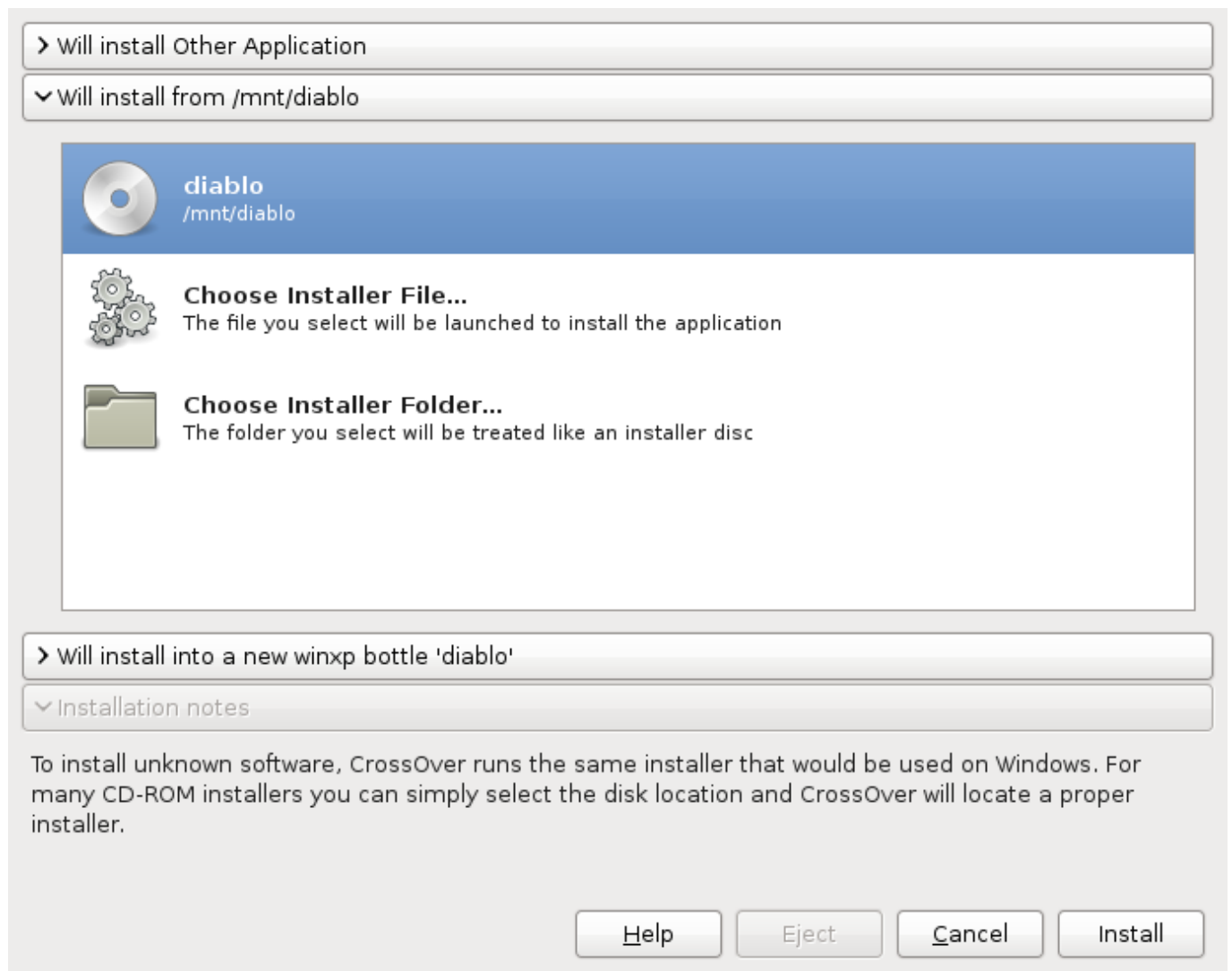
Volume Selection At this point, any available CDs, DVDs, or mounted ISOs or disk images should be available to select. When a volume is specified, CrossOver will search that drive for an installer or autorun file. This option is the default, and will work for most cases where the application comes on a disk.
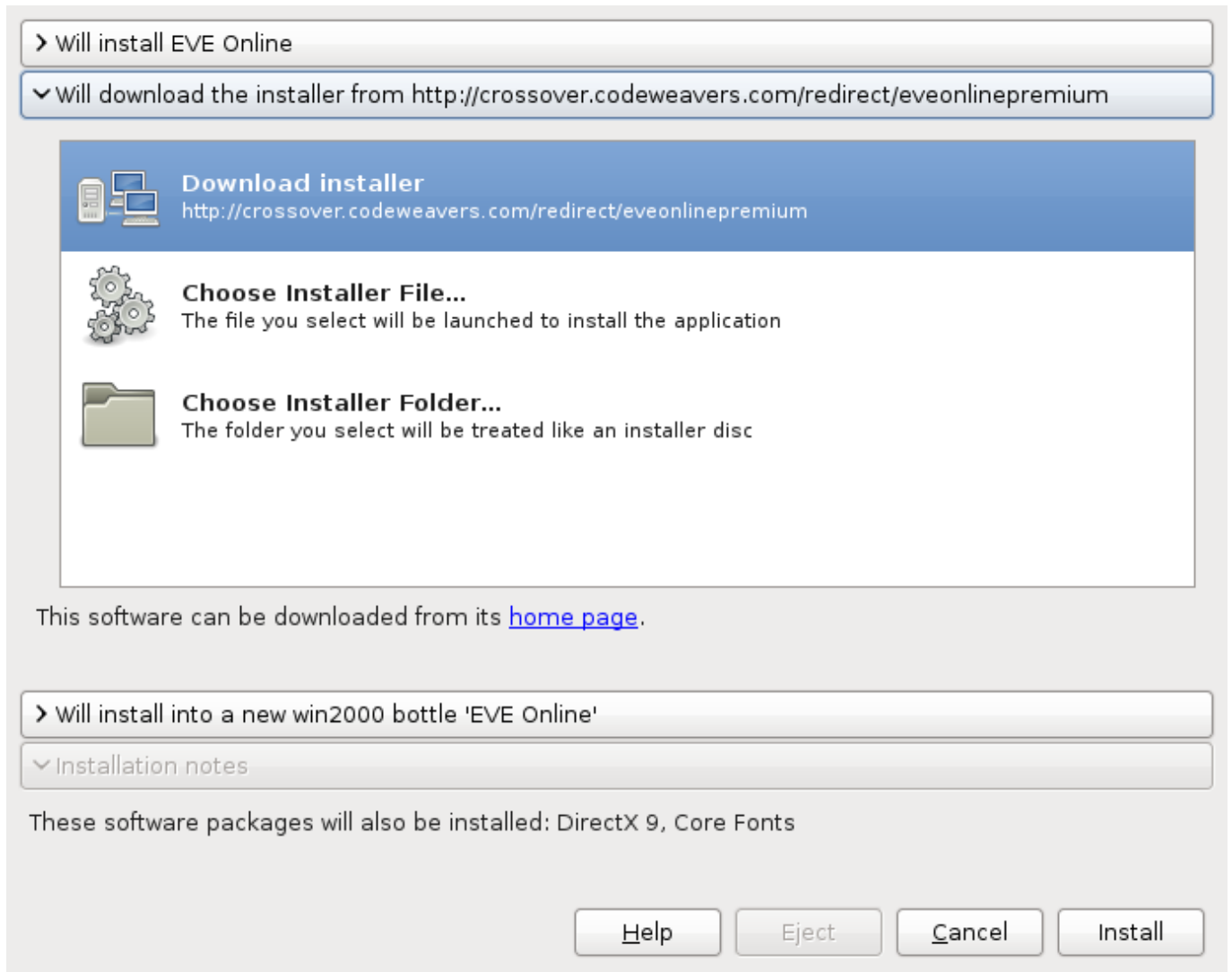
Choose Installer File If you want to install software off your hard drive, or off a CD that contains several installers, select this option and specify the desired installer. In some cases, CrossOver will be unable to locate a default installer file when you select one of the CD-ROM options. In those cases, you will need to locate the installer file on the disk yourself, using this option.

Choose Installer Folder This option is useful if the content of a CD has been copied into a folder on your local hard drive. It may also be necessary if you are installing from a disk that contains multiple installers in subdirectories.

The Choose Installer Folder... option will treat a selected folder as though it is in installer disk. That means that if the selected folder doesn't contain an obvious installation entry point (for example an AUTORUN.INF or setup.exe) the installation may fail.

4.1.3   Downloading an installer

Many supported applications can be downloaded from the Internet. For most of those, CrossOver can automatically download the installers for you. Make sure that you have an active connection to the Internet if using this facility.

CrossOver will store downloaded installers, so if you install the same component frequently it should only require a single download. And if you have an installer file already located on your hard drive you can always select it via the Choose Installer File... option.

4.1.4   Selecting a bottle for installation

> **!** **Important**
> In most cases, CrossOver will install new software into a a new bottle and you will have no need to visit this panel.
> The exception to this rule is when installing a service pack or upgrade, in which case you may need to manually direct the Installer to apply the package to the bottle that contains the software in need of upgrade.
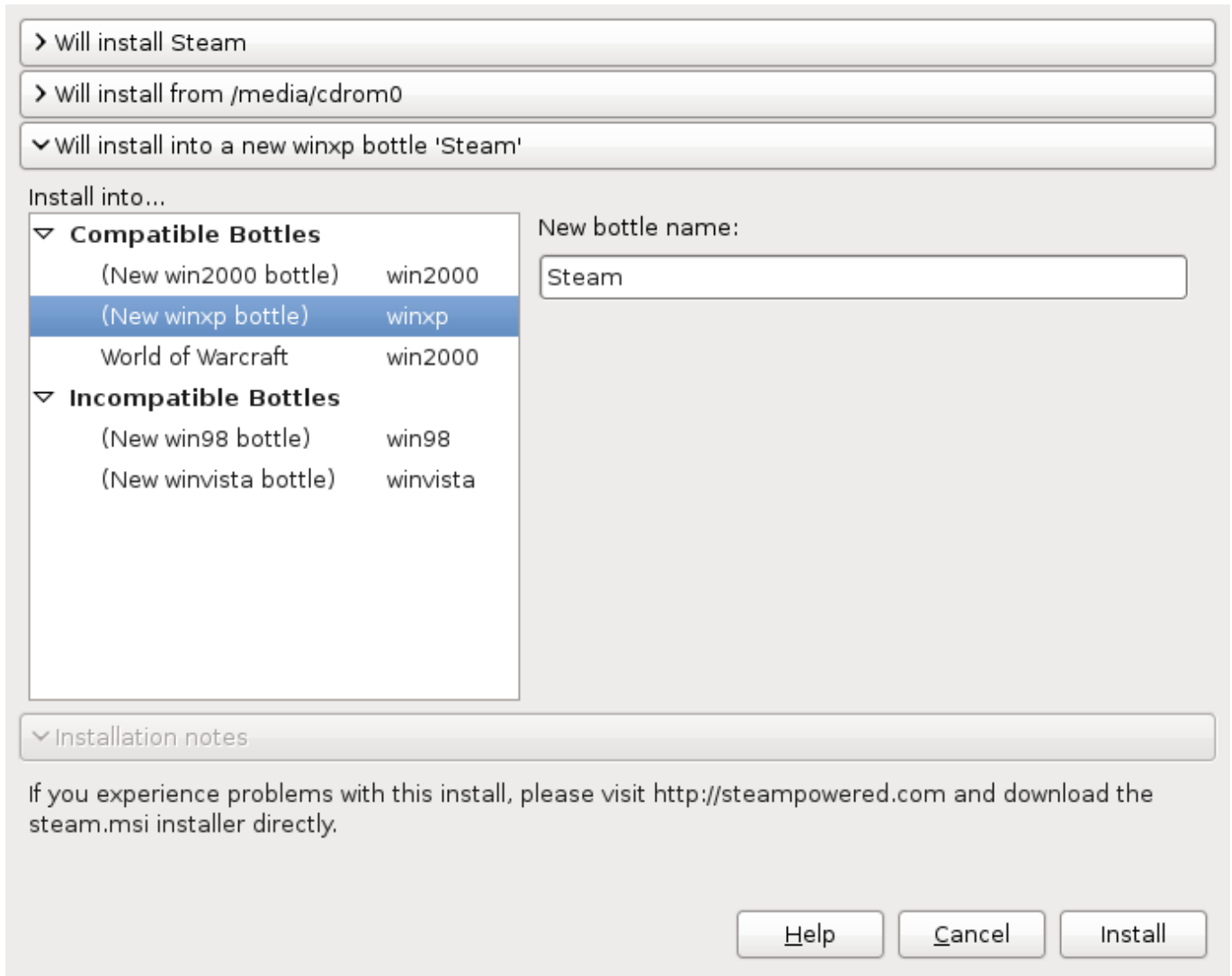
4.1.5 Completing the installation

Once you click Install, your interaction with the CrossOver Software Installer is mostly finished. Various Windows installers may prompt you for interaction, while the Installer keeps a running tab of the completed steps.
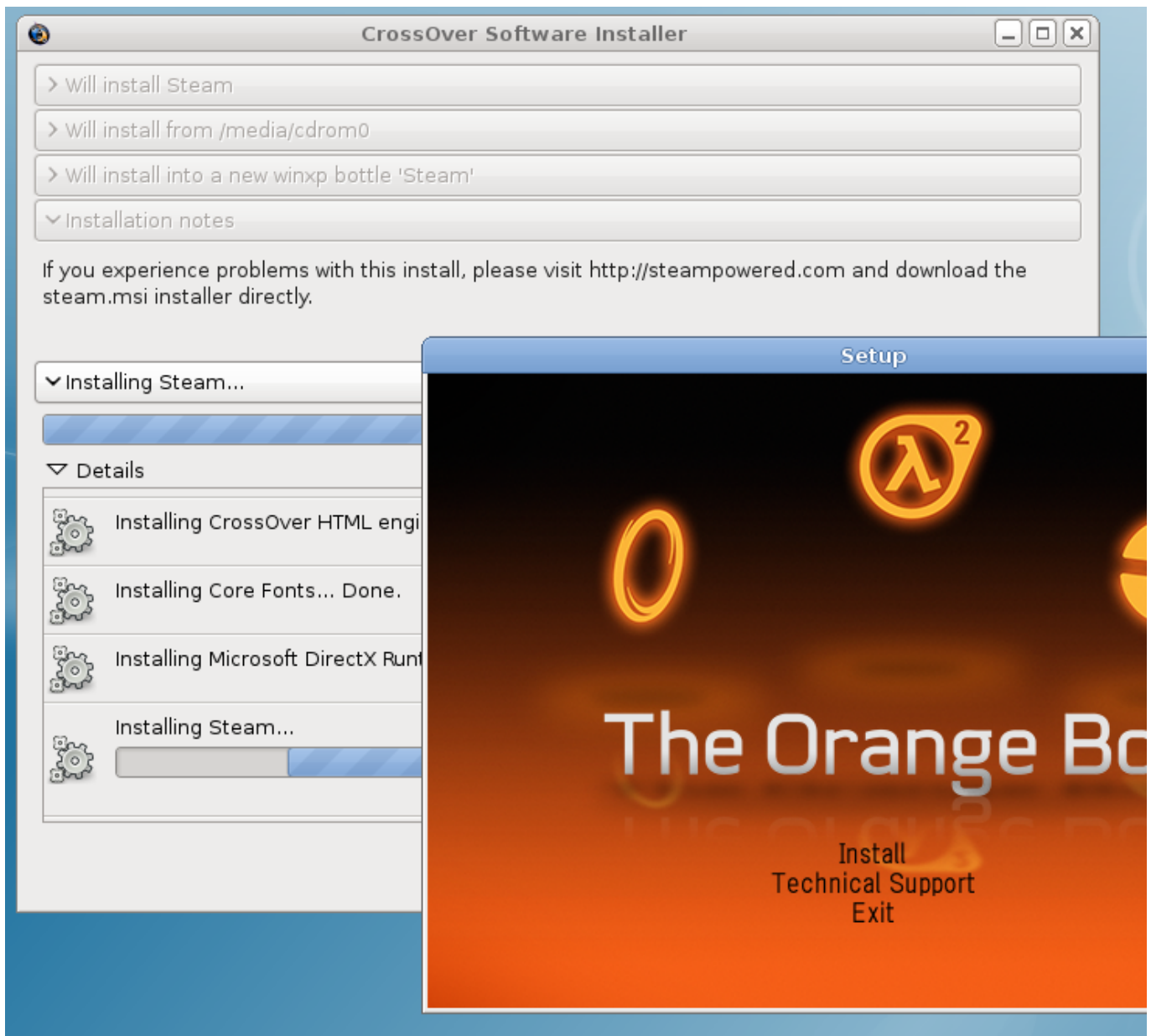
The Cancel buttons should be used sparingly. Canceling a step may result in an unrecoverable problem that will require you to discard the target bottle.

4.2 Removing Games

Applications can be uninstalled via the Bottle Applications tab. To remove a package, select it in the installed software list and click on Repair / Remove. This will start the repair / uninstallation facility.

If the application you want to remove is not in the list, or if the Repair / Remove button is disabled, then it means it did not register an uninstallation procedure. It may propose an uninstallation option if you insert its CD-ROM and start the installation procedure again. Refer to your software documentation for other possible uninstallation options.

Tip
When removing an application, be sure to completely uninstall it, including any system extensions that were associated with it. Otherwise, the Bottle Manager may not recognize that it has been uninstalled and you will have trouble reinstalling it.

Chapter 5

Using CrossOver Games

5.1 Running Windows games

5.1.1 Running from the menu

On most operating systems and desktops, Windows application installers will create links in your application menu. On KDE you will be able to run CrossOver applications from the "K" menu, on GNOME by clicking on the "foot", and on Red Hat by clicking on the hat.
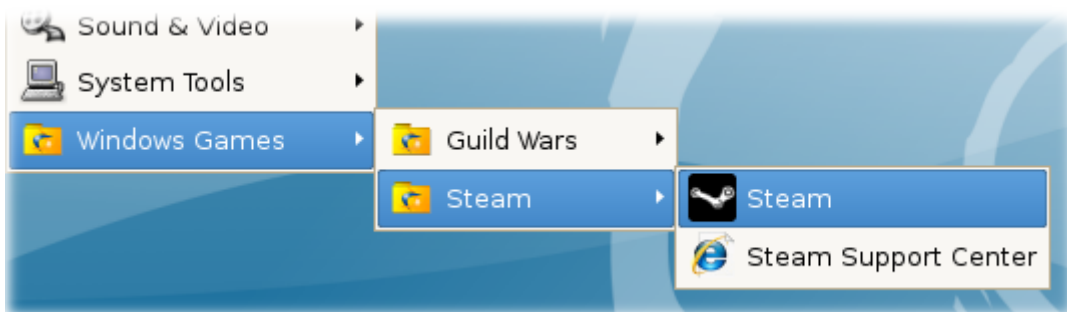
Windows applications (Word, Excel, etc.) will appear in your Windows Applications menu. Additionally, you will have entries for three CrossOver-specific applications in your CrossOver menu: the Bottle Manager, Reset CrossOver Office and Simulate Windows Reboot.
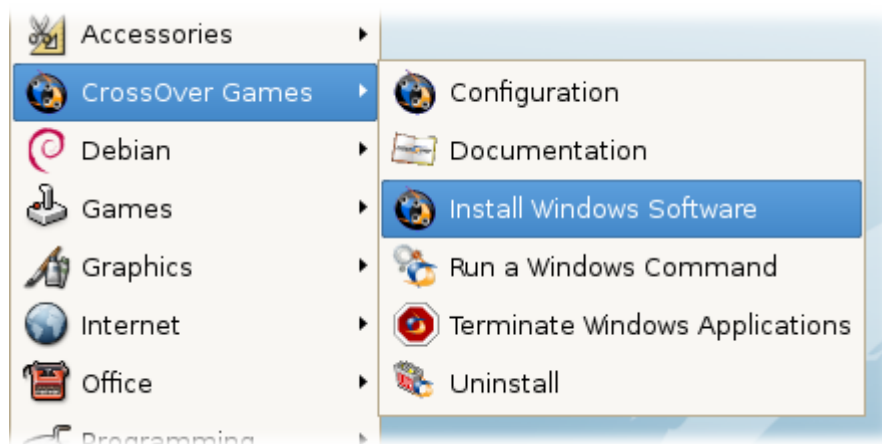
If no menu entries are created, you will still have the option of running applications from the command line. You may be able to associate these command lines with the menu yourself, using whatever menu-editing tools are provided by your particular system.

5.1.2 Running Windows applications from the command line

5.1.2.1 Using command line shortcuts

If CrossOver Games is installed for a single user, each Windows application you install will create simple command-line shortcuts in your ~/cxgames/bin directory. This will allow you to run most applications from the command line by typing, for example:

```
$ ~/cxgames/bin/winword
```

> **Tip**
>
> If you install the same application in to more than one bottle, the resulting script will point to the most recent installation. For example, if you have a bottle such as the default win98 bottle and another unsupported bottle, you then install Microsoft Office in the win98 bottle, then install again in a unsupported bottle, the resulting command-line shortcuts will point to your Office installation in the unsupported bottle.

These shortcuts correspond to the menu entries in the menu control panel. Whether or not they are available for a particular application will depend on the behavior of that application's installer.

> **Tip**
>
> This option is not available if you installed CrossOver Games in Private multi-user mode. In that case, you will need to run applications using the --cx-app method.

For a complete list of the shortcuts available, type the command

```
$ grep -l desktopdata/cxmenu ~/cxgames/bin/*
```

5.1.2.2 Using "wine --cx-app"

If CrossOver Games is installed as root, or you wish to run an application that did not create an icon or command line shortcut, you can still run applications by using the **wine** script directly.

The CrossOver Games wine script is located in the cxgames/bin directory. The simplest way to start an application is to use the "--cx-app" argument. This will ask the **wine** script to locate and execute the specified application. For example, to run Word on a system with a root install:

```
$ /opt/cxgames/bin/wine --cx-app winword.exe
```

Or, if cxoffice is installed for a single user:

```
$ ~/cxgames/bin/wine --cx-app winword.exe
```

For a complete list of applications that will work with the --cx-app argument, try this:

```
$ find ~/.cxgames -iname "*.exe"
```

> **Tip**
>
> There will be many .exe files on your system that are either system tools or subcomponents of other applications. Running some of these programs could cause unpredictable or destructive things to happen. It's never a good idea to run a Windows applications unless you have a good understanding of where it came from and what it does.
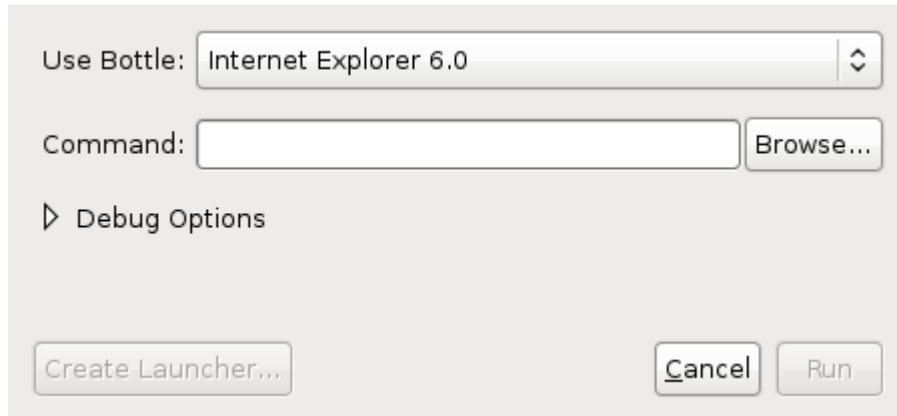
> **!** **Important**
>
> Wine will search and run in the default bottle unless told otherwise. To run a wine command in a different bottle, specify the bottle like this:
>
> ```
> $ ~/cxgames/bin/wine --bottle bottlename --cx-app winword.exe
> ```

5.1.3 Running a Windows command

The Run a Windows Command menu provides a simple way to run a Windows command-line in CrossOver. This can be a useful way to run standard Wine tools such as regedit or notepad, and can also be used to run applications which fail to create icons or shortcuts.

This tool is available in your system menu, or you can run it from the command line:

```
$ ~/cxgames/bin/cxrun
```

or, for multi-user installs:

```
$ /opt/cxgames/bin/cxrun
```

> **!** **Important**
> This feature is especially important when there are multiple bottles present. When run from the command-line Wine generally operates on the default bottle. Cxrun provides a simple way to specify an alternative bottle.

5.2 Stopping misbehaving programs

There may be occasions when CrossOver applications become unstable or stop responding. Running the Terminate Windows Applications program will reset CrossOver, halt all of a user's CrossOver applications, and provide an opportunity for a fresh start.

> **Tip**
> Resetting CrossOver Games will cause all CrossOver Windows applications to exit. Any unsaved changes to documents will be lost.

This tool is available in your system menu, or you can run it from the command line:

```
$ ~/cxgames/bin/cxreset
```

or, for multi-user installs:

```
$ /opt/cxgames/bin/cxreset
```

Chapter 6

Using the Bottle Manager

the Bottle Manager is the main tool for configuring CrossOver. It can be run from the CrossOver menu by selecting the Configuration option, or it can be run from the command-line like this:

```
$ ~/cxgames/bin/cxsetup
```

6.1 Managing Bottles

A bottle is a virtual windows environment. Each bottle contains a unique C drive and all its standard sub directories: Windows, Program Files, etc. A bottle also contains a complete Windows registry, a full set of most CrossOver settings, and one or more Windows applications.

CrossOver Games allows you to maintain multiple bottles in one CrossOver installation. This is like having several different Windows machines operating together on your single Linux computer. This is useful anytime you want to install multiple applications yet prevent them from interacting or damaging one another. For example: Typically the Internet Explorer 6.0 installer upgrades any existing Internet Explorer 5.0 installation. Using bottles it is possible to install Internet Explorer 6.0 into a new, empty bottle, while leaving an existing install of Internet Explorer 5.0 intact and untouched.

Multiple bottles are also useful anytime a particular application requires special system settings that are otherwise undesirable. It is also possible to maintain bottles that emulate different Windows versions. For example, Microsoft Office 2003 only works on Windows versions 2000 or later, whereas Microsoft Office 97 runs best in a bottle that emulates Windows 98.

The Bottle Manager allows you to create, delete, and modify the bottles in your CrossOver install. For the most part, the CrossOver Software Installer will take care of creating appropriate bottles, but this dialog provides more direct control.
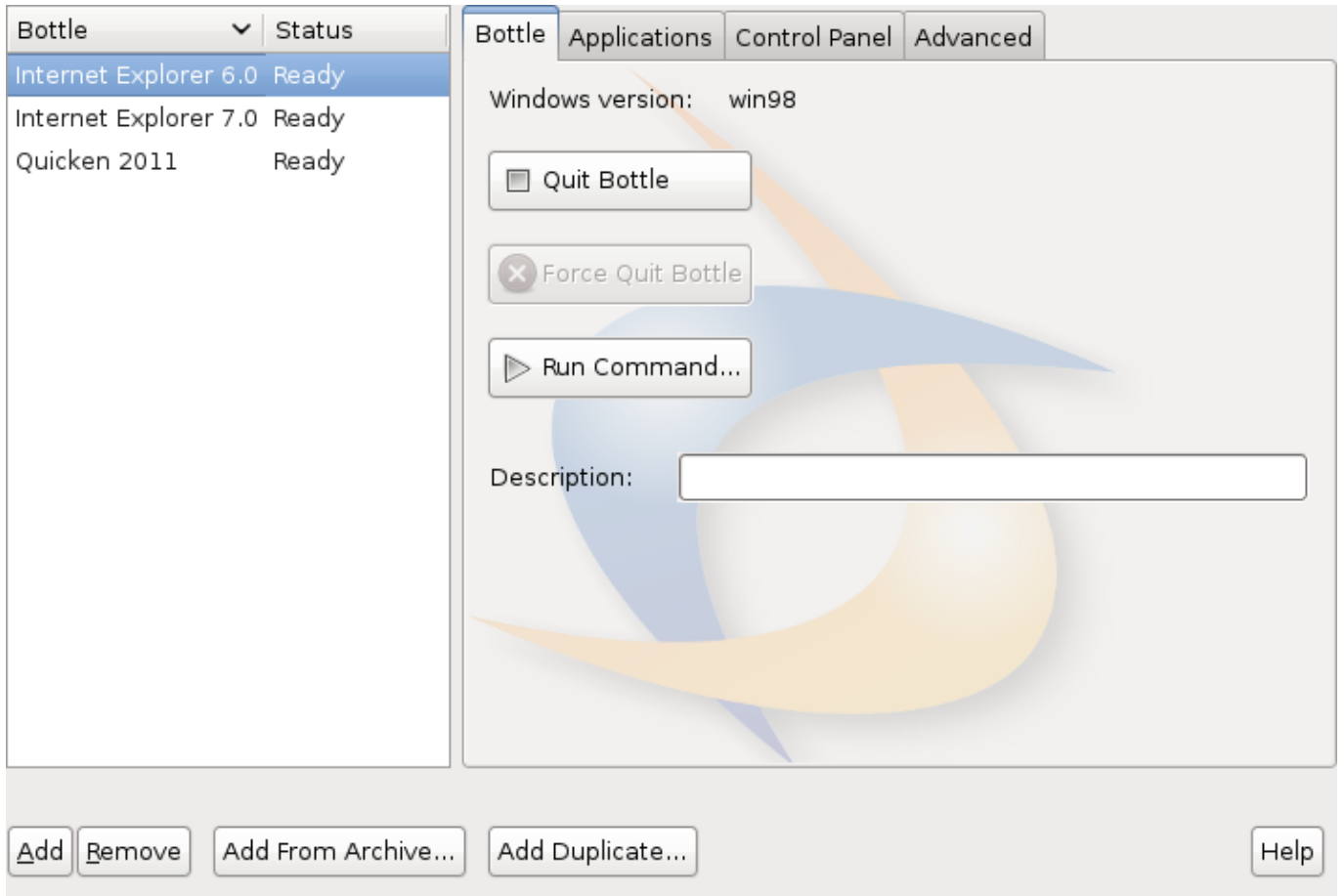
Add This button creates a new bottle. You will have an opportunity to choose which Windows mode the bottle will emulate.
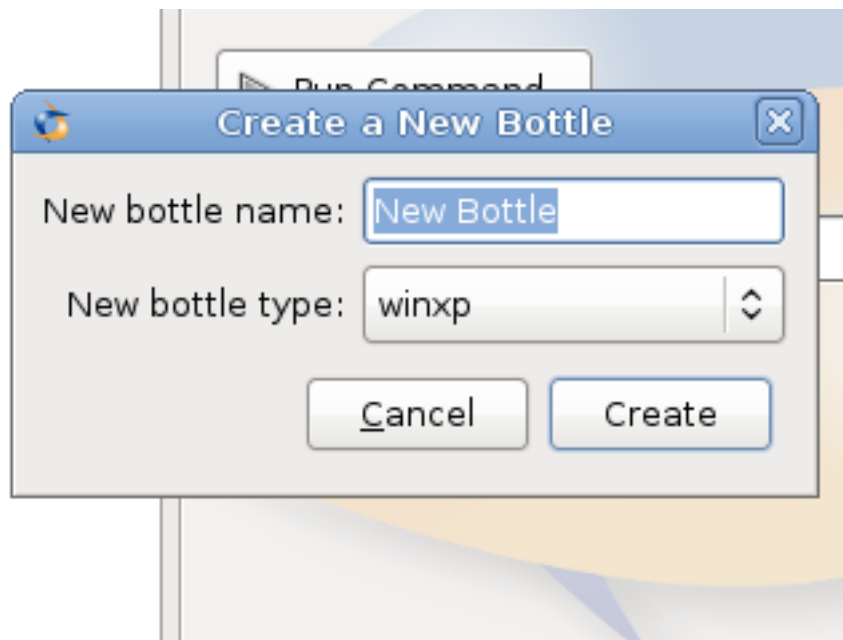
Remove This button will delete the selected bottle. This will remove all applications, settings, and documents that are inside this bottle's directory.

Add Duplicate.. This button allows you to create a duplicate of an existing bottle. The duplicate will contain the same applications and settings as the original.

Add From Archive.. This button will allow you to choose and restore a bottle archive created with the Archive button. The

restored bottle will be replaced in your bottle list, and the files copied into your bottle directory.

6.1.1 Bottle Windows versions

Most bottle settings can be adjusted once a bottle is created. The Windows version of a bottle, however, must be chosen when the bottle is created.

The CrossOver Software Installer will set the Windows version appropriately when creating a new bottle. If you are creating a bottle by hand you must specify a Windows version.
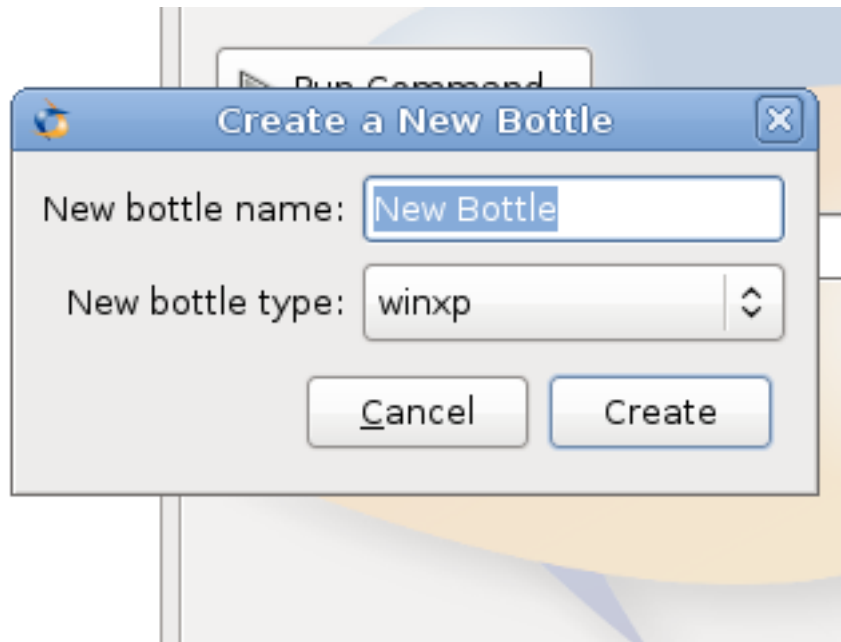

Most supported applications run best in a bottle of type 'win98'. A few applications (Office 2003 and iTunes in particular) require a newer operating system to run, and must be installed into a 'win2000' or 'winxp' bottle. When installing unsupported applications, it may be worthwhile to test them in both a win98 and a win2000 bottle to determine which works the best. For purposes of compatibility, winxp and win2000 are generally equivalent.

6.2 The Applications tab

The Applications tab shows the list of installed Windows applications and lets you install and uninstall them.
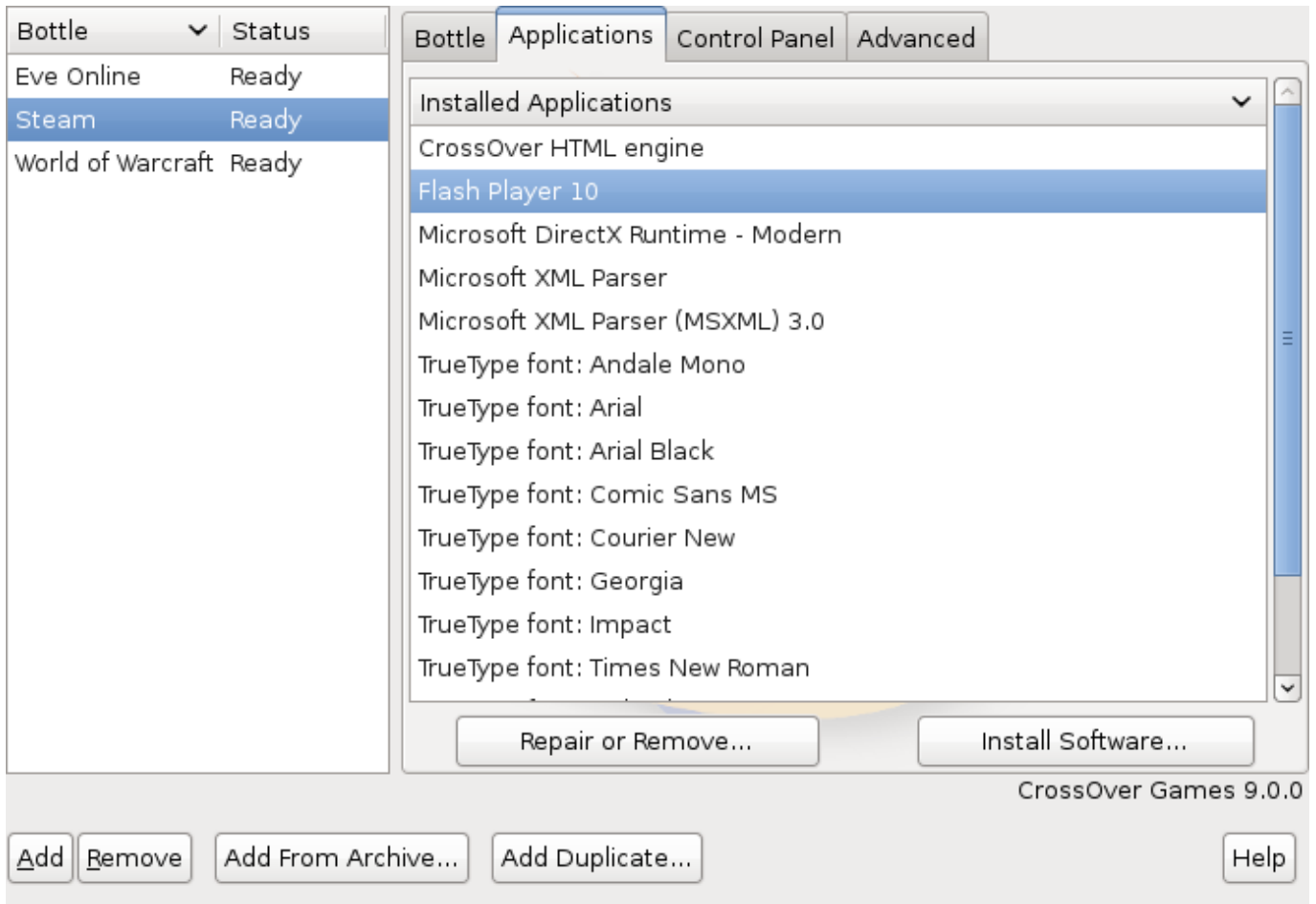
Installed Software This lists all of the software that CrossOver has installed. Because many software packages contain or depend on other items, you will often see items in this list that you did not explicitly install.

Install Software... To install new Windows applications on your system, click the Install Software button. This will launch the CrossOver Software Installer which will guide you through the rest of the process.

Repair or Remove... Some applications (e.g. Microsoft Word) include facilities for uninstalling themselves; other packages contains automatic repair or modification tools. In order to run these tools, select an item from the list and click Repair or Remove....

If the Repair or Remove... button is disabled for an application, that means that no uninstall tool is provided by that package.

6.3 The Control Panel tab

The Control Panel tab lets you launch control panel items that are installed by Windows programs, as well as some standard bottle-configuration tools.
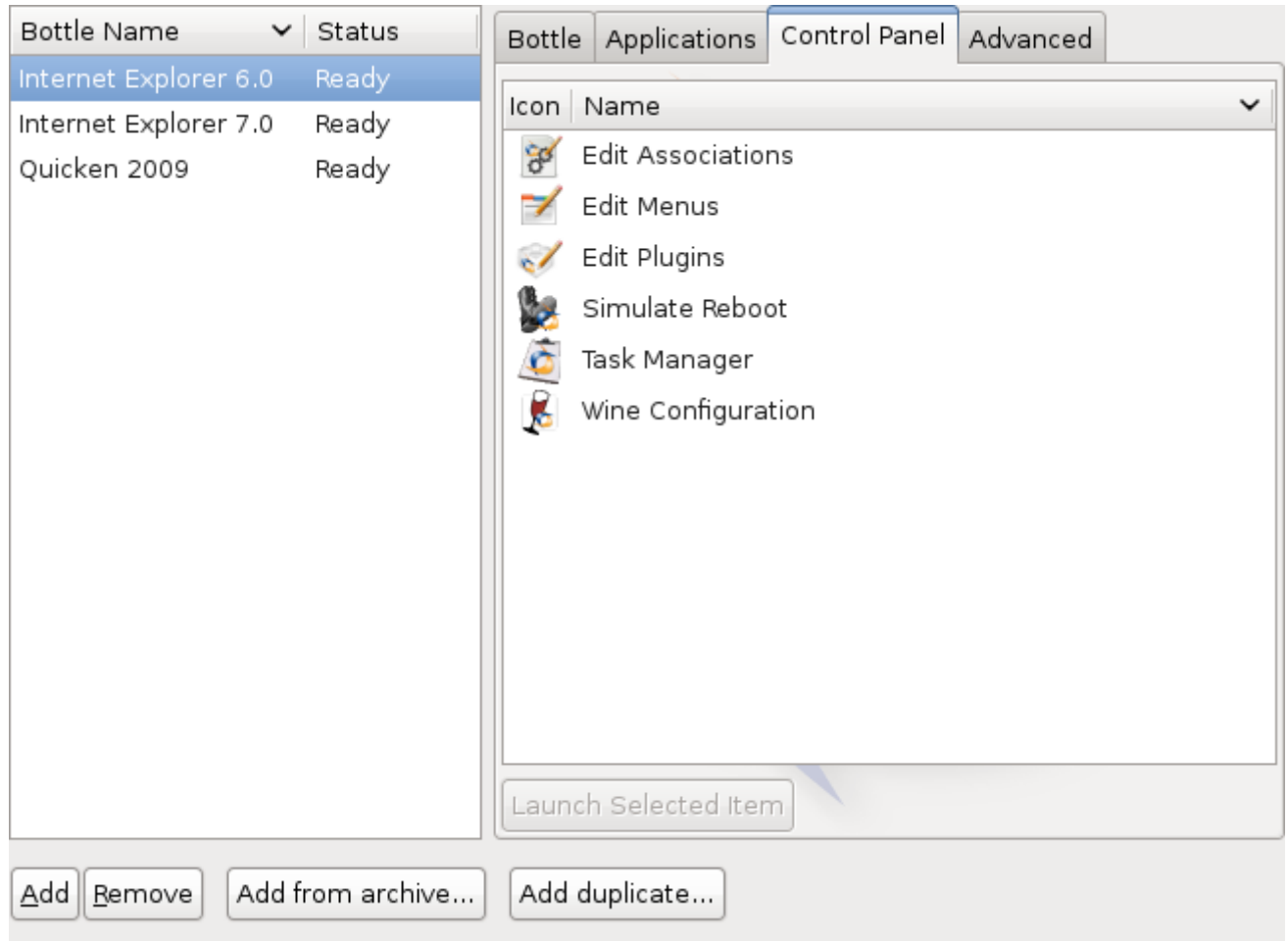
To launch, select the entry for the control panel that you wish to use and click Launch Selected Item.

Tip
The vast majority of settings on your system should be changed using the configuration tools that come packaged with your OS and distribution. Most Windows control panels are unsupported applications, and their behavior may be unreliable, erratic, or destructive.

In addition to the tools that are installed by software installers, CrossOver provides several built-in control panel tools.

Edit Associations In most cases CrossOver should install reasonable file-type associations for each program that you install. The Edit Associations control panel allows you to fine-tune these associations. It may be useful in the event of a conflict between bottles or programs for a single file type.
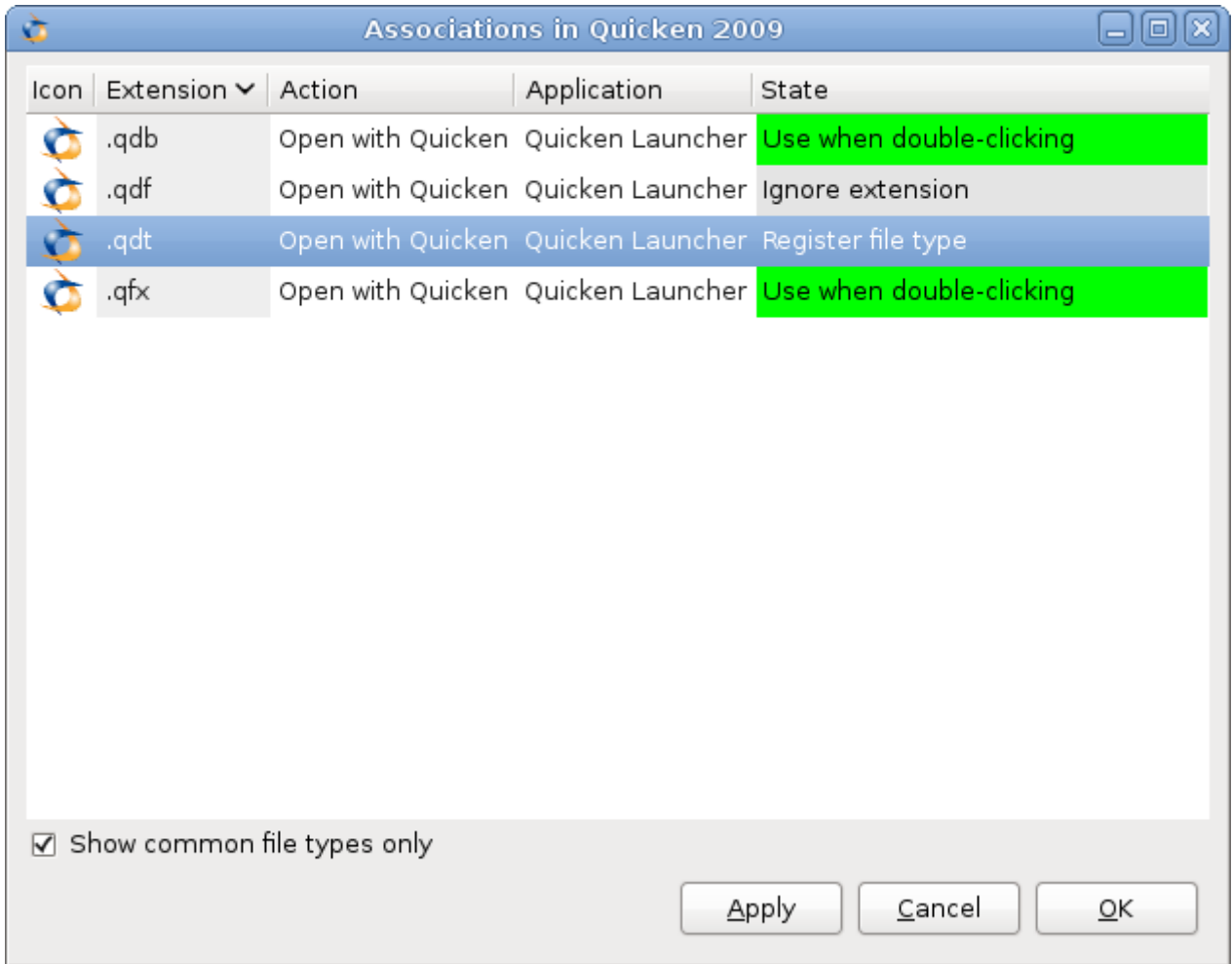
Edit Menus Frequently applications install more menu icons than you are likely to use. The Edit Menus control panel allows you to disable unneeded icons and simplify your system menus.
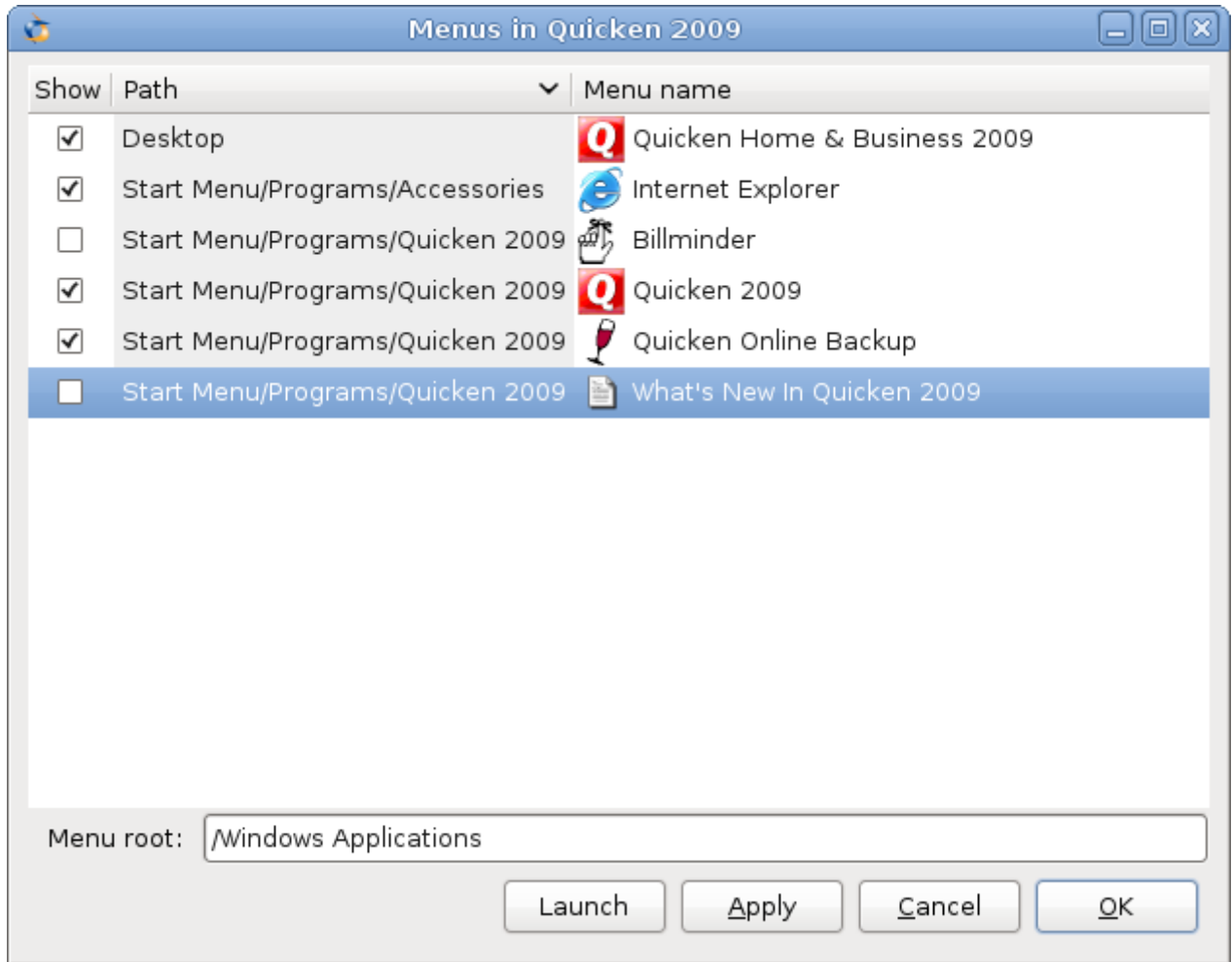
Simulate Reboot Some Windows applications require a system reboot to complete certain tasks. Also, occasionally, Windows programs get stuck in indeterminate states where their behavior is erratic or unreliable. Both of these problems can be addressed without rebooting your system -- just launch the reboot tool and simulate a reboot within a specific bottle.

Task Manager The task manager will display a list of processes running within a bottle. This tool may be useful to selectively halt programs which have stopped responding.

Wine Configuration Wine config provides access to a wide range of bottle configuration settings. This tool is occasionally useful for solving issues with system integration -- if you contact tech support, you may be instructed to make changes via winecfg.

6.4   The Advanced tab
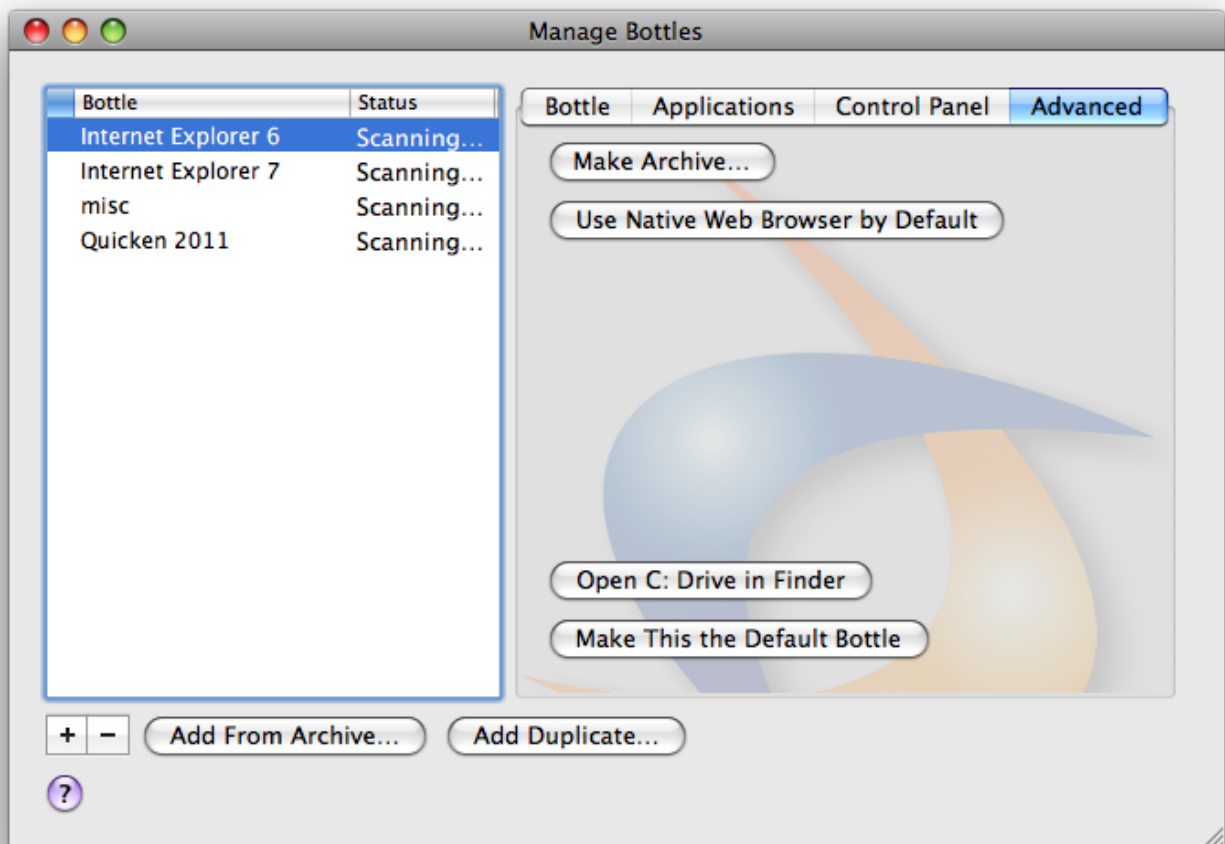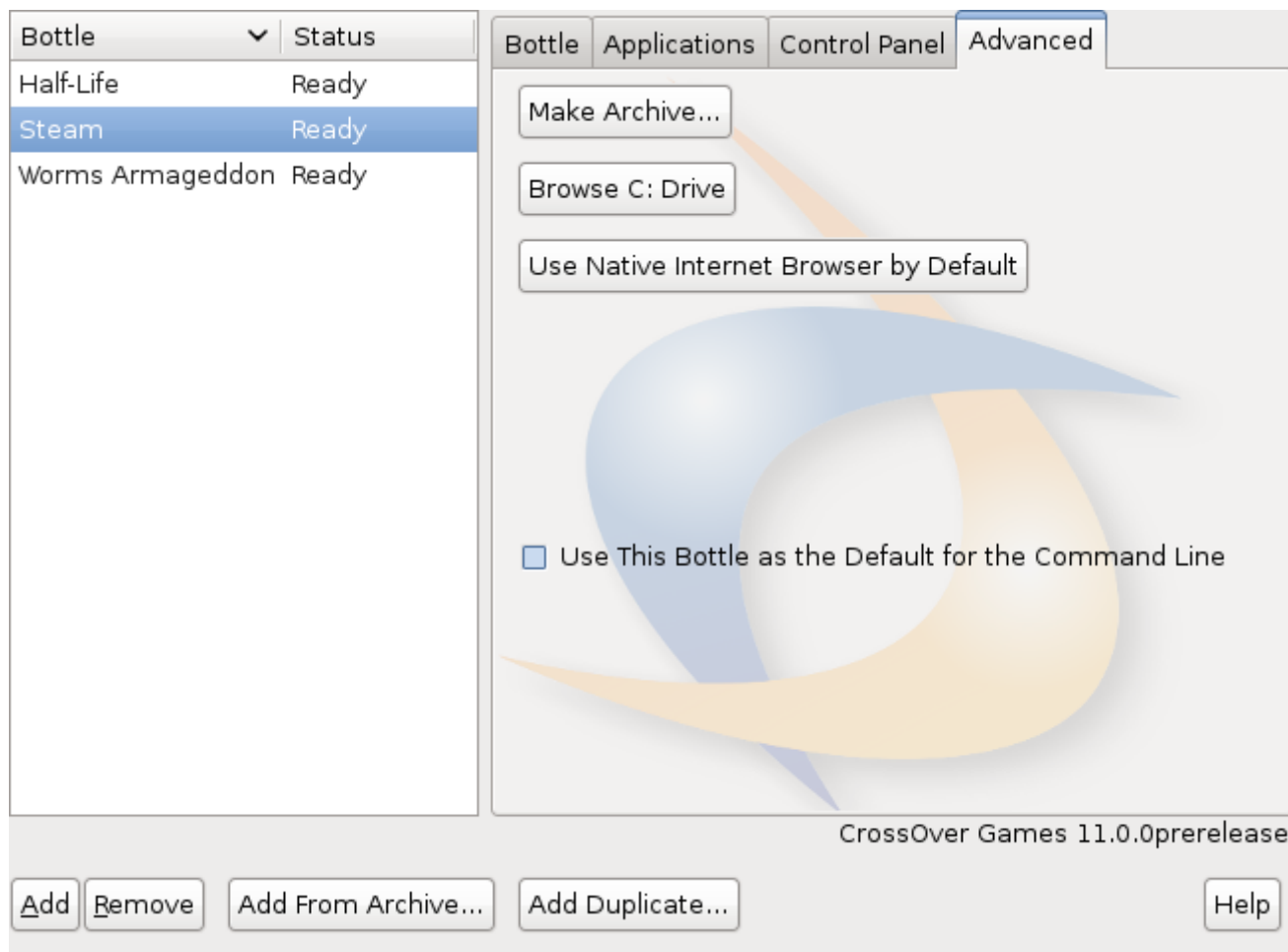
The Advanced tab provides infrequently used bottle options. Most of the settings available here will be automatically set to reasonable defaults.

Make Archive... This button creates a compressed archive of the selected bottle. It is often prudent to make a backup archive of a bottle before installing new software or modifying bottle settings. Archives can be restored using the Add From Archive... button.

Use Native Web Browser by Default Often when a web browser is installed in a bottle, URLs are automatically opened by the browser in the bottle. Click this button to redirect those URLs to your standard system browser instead.

Browse C: Drive This button will open a file browser window viewing the contents of the current bottle's C: drive.

Use this bottle as the Default for the Command Line When this option is checked, the selected bottle will be used to handle Wine commands in the shell, as well as handling most associations and .exe files.

Chapter 7

Using CrossTie files and the CodeWeavers CrossOver Compatibility Center

The community of CrossOver's advocates, users and volunteers gathers at the CodeWeavers CrossOver Compatibility Center. There's a lot of useful information to be found there for the casual user as well as for a CrossTie developer. Thousands of applications are cataloged there along with forums, articles, and tips and tricks. If you have questions about the use of a program, it's the first place to look.
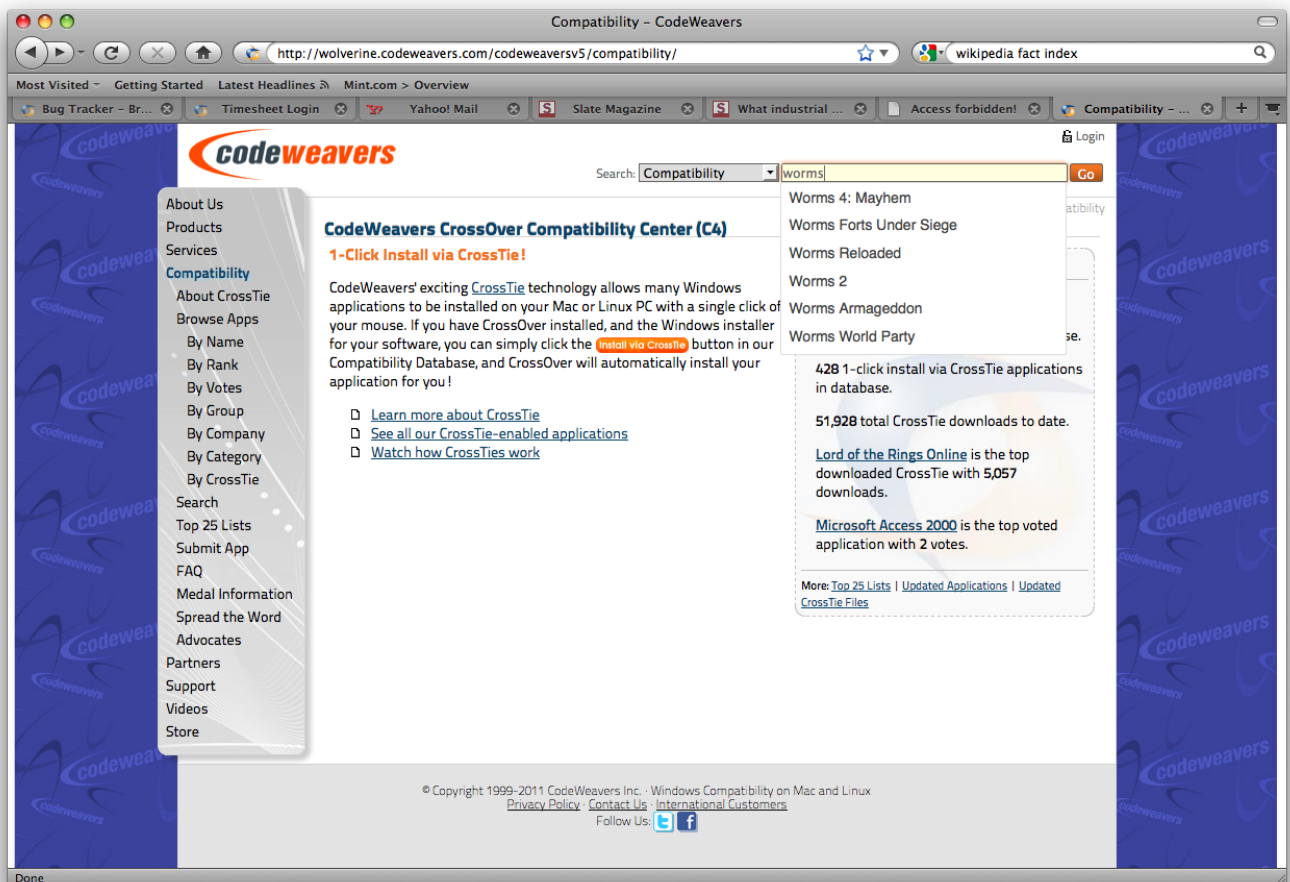
## 7.1 Installing Community Support Software via the Compatibility Center

Along with the set of games supported by CodeWeavers staff, CrossOver contains profiles for a wide range of community supported programs. CrossOver is able to install these via user-submitted CrossTie files. A CrossTie file is a simple XML document that describes the steps that CrossOver should take to install and run a given piece of software. For application advocates or adventurous users, the Compatibility Center provides a graphical tool for creating and editing CrossTies. For less ambitious users, many programs cataloged in the Compatibility Center can be installed with a few quick clicks, starting on the web page.

Tip

If you have the Installer Assistant set to automatically download new profiles, then every working game in the compatibility center will also be already present in the assistant's application list. The Compatibility Center provides an alternative route for locating the same software for users who prefer to browse a website.
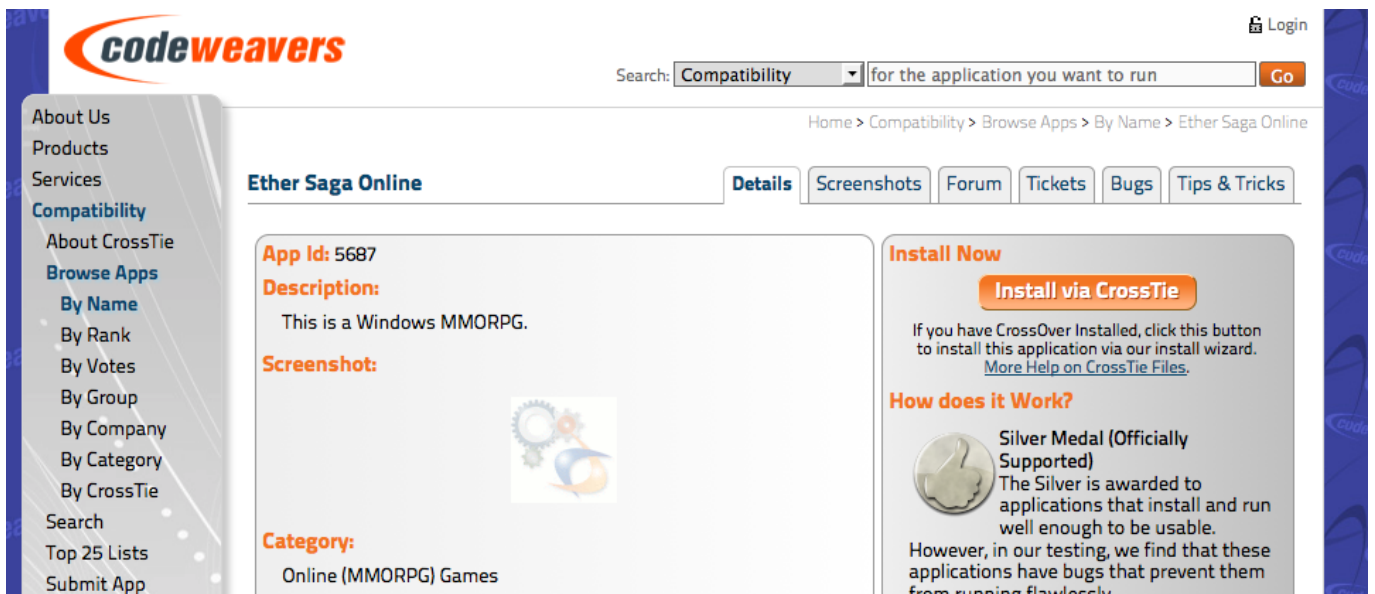
If a CrossTie exists for a given piece of software, its entry in the Compatibility Center will have an 'Install Now' button. Click to install!
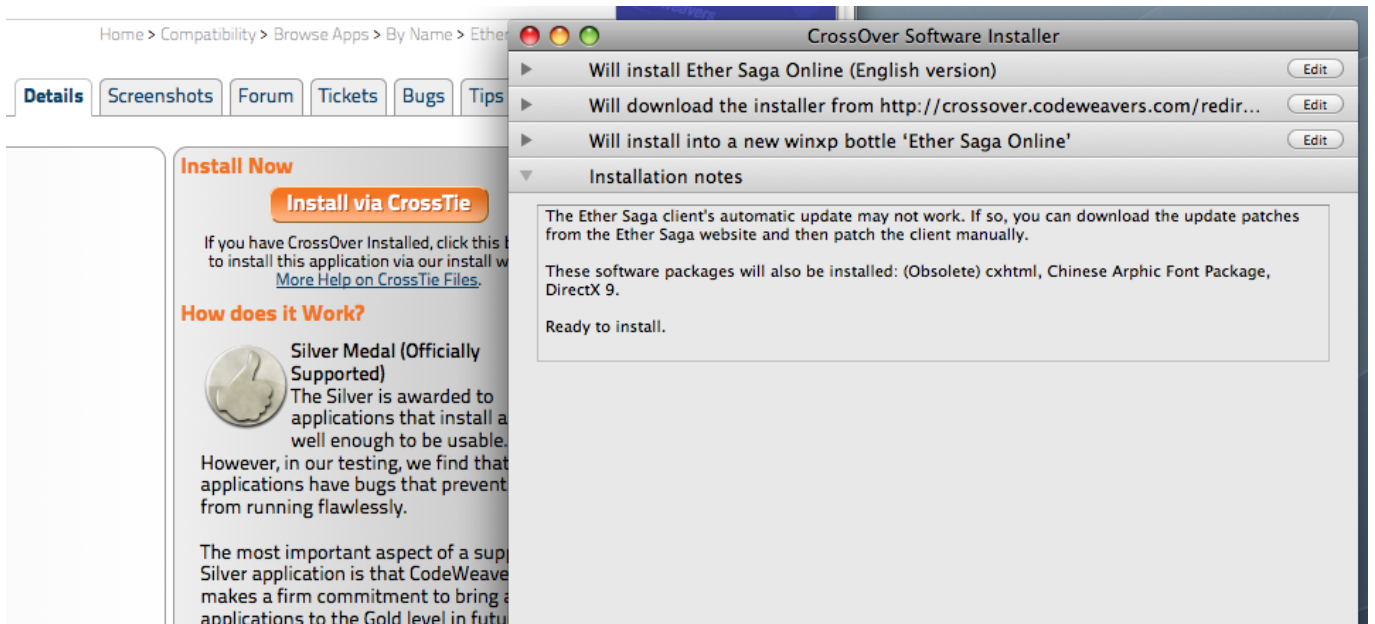
In most cases, a single click will launch the Installer Assistant. With some browsers you may need to download the CrossTie file (it will have a .tie extension) and double-click to open.

7.2   Using CrossTies with multiple CodeWeavers products

CrossOver contains logic to distinguish between different types of CrossTie files and dispatch them to the correct product. In general, games CrossTies will automatically be opened by CrossOver Games, and CrossTies for productivity apps will be opened by CrossOver. CrossTie developers are able to specify within the CrossTie which program and version will provide the best results.

In a few cases, the product to use for a given CrossTie may not be obvious. Some software works equally well in CrossOver and CrossOver Games. Or, you may have multiple versions of a single product installed on your system (for example, CrossOver 9.2.0 and CrossOver 10.0.0.) If CrossOver is unable to determine the best default application, it will prompt you to make a choice.
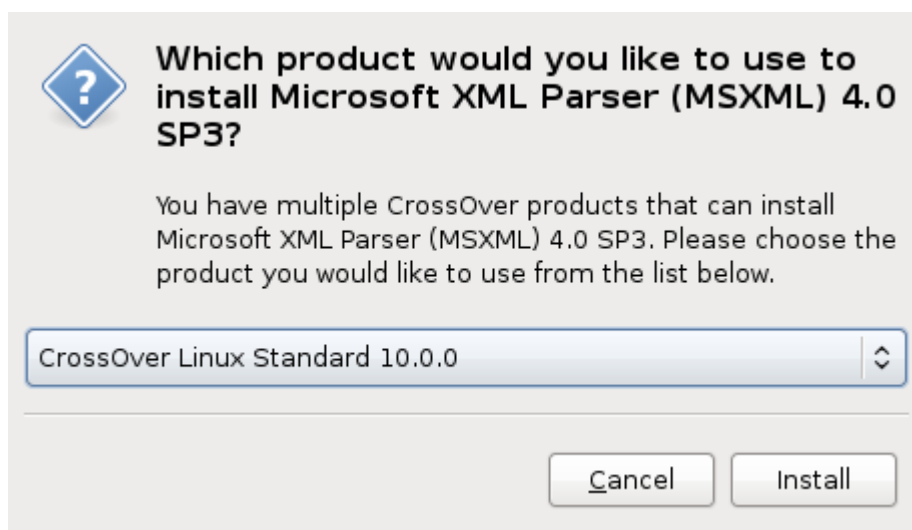
Select your preferred version, and you'll be off and running.

Chapter 8

Advanced Manual Configuration Options

8.1 Adding a new drive or customizing the drive label / serial number

CrossOver allows you to add new drives to be used by Windows applications, and to change their label or serial number. If you need to create a new drive or have an application which depends on a serial number or Windows volume label then follow the examples below.

For example to make the path `/mnt/something` available as the drive J: in a bottle, you would execute the following command:

```
$ ln -s /mnt/something "~/.cxgames/bottlename/dosdevices/j:"
```

To associate this drive to the `/dev/hdb1` device you would add a double colon to the command. This command is equivalent to the "Device" line in the old configuration file.

```
$ ln -s /dev/hdb1 "~/.cxgames/bottlename/dosdevices/j::"
```

For 'real' devices, CrossOver should automatically get the serial number and label for a volume. However you can also set these manually. To set the serial number of a given mount point you need to create a file called `.windows-serial` on the root of the virtual drive.

```
$ echo '12345678' >/mnt/something/.windows-serial
```

To set the label you would create a file called `.windows-label` on the root of the virtual drive.

```
$ echo 'MY_LABEL' >/mnt/something/.windows-label
```

8.2 Customizing bottles using bottle hooks

Bottle hooks are a mechanism that lets you automatically customize the bottles created by CrossOver. Because it relies on scripts, it is very flexible. For instance it can modify drive letter assignments but also registry settings, the contents of the `c:` drive, etc. This mechanism is especially useful when you want to customize a bottle which you distribute to a range of machines, or to customize a managed bottle for each specific user.

Bottle hooks can be created at three levels:

- System-wide hooks apply to all bottles on the system, including non-root user bottles if CrossOver was installed as root. Thus they are best suited to adapt the bottles to the configuration or hardware of the machine. These hooks are located in the `$CX_ROOT/support/scripts.d` directory.

- User hooks are the same as system-wide hooks but apply only to one specific user's bottles. They are run after all the system-wide hooks have been run. They are located in the `~/.cxgames/scripts.d` directory.

- Finally, each bottle can have its own set of hooks. These are especially suited to configure a managed bottle for use by each non-root user. This is also the only kind of hook that is automatically packaged with the bottle when it is archived, and are thus guaranteed to run when the bottle is restored later, even if this is on another computer. These hooks are located in the `scripts.d` directory in the bottle.

Each hook is an executable file, usually a shell script, and must be placed in one of the above hook directories. The name of the hook must be of the form **nn.name**, where **nn** are two decimal digits that dictate the order in which the hooks are run, and **name** must not contain any dot or tilde usually indicates the hook's purpose.

The hooks are then called as described in the following events:

- When a bottle is created

  hook create *template*

  The *template* parameter indicates the name of the template the bottle is based on, for instance 'win98'.

- When a bottle is restored

  hook restore

- When a bottle is upgraded to a new CrossOver version

  hook upgrade-from *old-bottle-version*

  Where *old-bottle-version* is the CrossOver version the bottle was last used with. This can help you gauge how out of date the bottle was, but note that the hooks are called only after CrossOver has upgraded the bottle.

- When a bottle stub is created

  hook create-stub *managed-wineprefix*

  This case happens when a managed bottle is used in a non-root account for the first time. In this case the `$WINEPREFIX` environment variable points to the freshly created bottle stub, while *managed-wineprefix* points to root's reference copy in `/opt/cxoffice/support`.

- When a bottle stub is updated

  hook update-stub *managed-wineprefix*

  This case happens when the administrator has updated the managed bottle's reference copy in *managed-wineprefix* and the user's bottle stub must not be updated to match.

In all cases the hooks are called in the Wine context. This means that they can count on the following environment variables being set:

CX_ROOT Contains the absolute path to the directory where CrossOver is installed.

CX_BOTTLE Contains the name of the current bottle.

WINEPREFIX Contains the absolute path to the bottle directory.

Bottle hooks can also use the **wine** script to call Winelib or Windows applications to modify registry settings or other aspects of the bottle.

Here is an example of a bottle hook that modifies the drive letter assignments so that there is no `Y:` drive, and the `H:` drive points to the user's `$HOME` directory.

```
#!/bin/sh
rm "$WINEPREFIX/dosdevices/y:"
if [ ! -d "$WINEPREFIX/dosdevices/h:" ]
then
    ln -s -f "$HOME" "$WINEPREFIX/dosdevices/h:"
fi
```

8.3   Setting the bottle search path

You can control the list of directories where CrossOver looks for bottles by setting the CX_BOTTLE_PATH environment variable. By default this variable is set to ~/.cxgames. To not have to set the modified path manually each time you run CrossOver, edit ~/.cxgames/cxgames.conf and add the following lines:

```
[EnvironmentVariables]
"CX_BOTTLE_PATH"="/extra/bottles:~/.cxgames"
```

CrossOver will then first look for bottles in /extra/bottles and then in the standard location. Also note that CrossOver will create new bottles in the first writable directory present in the search path. So order is important.

Furthermore CrossOver will not move existing bottles to the new location. So you need to either keep the default bottle location in the list, or to move your existing bottles manually. A simple move command should do the trick:

```
$ mv "~/.cxgames/bottlename" /extra/bottles
```

If you installed CrossOver globally you may want this setting to have an effect on all users. To do so you would set it in the global configuration file, that is in /opt/cxgames/etc/cxgames.conf. You should also make sure each user gets his own bottle directory. Usually you would do so by using the USER environment variable like so:

```
[EnvironmentVariables]
"CX_BOTTLE_PATH"="/extra/${USER}/bottles"
```

Chapter 9

Troubleshooting

In case of problem, the first place to start is the CodeWeavers Support Library. It is updated regularly to document known issues and their workarounds. With luck the solution to your problem may already be waiting for you.

You can help make CrossOver Games an even better product by reporting any new problem you come across to the CodeWeavers support site. Before you can enter a ticket, you will need to log in to the system.

Tip

This is a *public* system. Emails sent to this address will be viewable by all. This also means that you can access past support issues and their resolution by going to http://support.codeweavers.com. There are privacy options available if you do not wish your request to be public. To learn more about these, read the FAQ on that site.

When reporting a problem, please include a description of actual vs. expected behavior in your reports, as well as the steps we should go through to reproduce the problem. It also helps to know which distribution of Linux you are using (including versions, please), whether you are using Gnome, KDE or neither, and whether you have installed CrossOver as root or in a regular user account.

Appendix A

Directory Structure, Location of Files

CrossOver creates two directories during its installation and setup. The installation process creates a directory structure at a user-specified location, whereas the setup directory is always in a fixed location relative to the user's home directory.

the Bottle Manager may also modify the MIME type associations on the system as well as the KDE and Gnome menus.

A.1   Installation Files

The location of the installed files can be specified during the installation, which defaults to `~/cxgames` for a non-root installation, and `/opt/cxgames` for a root installation. The installation tree has the following structure:

`bin`	This directory contains all the executable programs used by CrossOver. As a general rule, it is better to *not* place this directory into your `PATH` as it may conflict with other versions of Wine. We recommend creating symbolic links to individual programs in `/usr/bin` instead.
`lib`	This directory contains all the shared object files used by CrossOver. Again, we recommend against adding this directory to your `ld.so.conf` or to your `LD_LIBRARY_PATH`.
`doc`	This directory contains the CrossOver user guide.
`.manifest`	This directory is generated during installation and contains information used during the uninstallation process.
`share`	This directory contains supporting files used by CrossOver.
`support/installers`	This directory contains any installers that the Bottle Manager has downloaded for you.

etc The `etc` directory contains the CrossOver configuration. This directory contains the following files:

`cxgames.conf`	The CrossOver configuration file. The variables are fairly heavily commented, so there is a good chance that if you were so inclined, you could meaningfully edit it with a text editor. However, note that for most users we recommend using the Bottle Manager to modify this file.
`*.bak`	the Bottle Manager automatically backs up old versions of configuration files. It can get untidy--feel free to delete extraneous files.

~/.cxgames This directory contains all of the CrossOver settings, and all of your bottles.

~/.cxgames/bottlename Each bottle directory contains the following files and directories:

`*.reg`	Files that contain a simulated registry for the Windows environment.
`drive_c`	A complete directory structure replicating a Windows environment.

A.2 Menu and Association files

the Bottle Manager sets up Menus and Associations using a variety of different system files. The particular method that is used varies by operating system. The best way to investigate where menus and associations may be placed is by running the **locate_gui.sh** tool.

```
$ ~/cxgames/bin/locate_gui.sh
```

or, as root

```
$ /opt/cxgames/bin/locate_gui.sh
```

locate_gui.sh will list the different association and menu systems that are available on your system (e.g. KDE, Gnome, XDG) and then list the directories used to create these menus and associations.

Appendix B

Glossary

B.1   Supported Games

CrossOver Games provides many of the services which Windows programs expect to find. Because there may be imperfections in certain systems, CrossOver works better with some games than with others. CrossOver is expressly tested and tuned to work best with a predefined set of games. Because of concerns with copy-protection, most games work best when installed via an online system such as Steam.

Supported Games include:

- World of Warcraft

- Guild Wars

- EVE Online

- Half-Life (via CD or Steam)

- Half-Life 2 and variants such as Counter-Strike (via Steam)

- Team Fortress 2

- Portal

- Call of Duty (via Steam)

- Call of Duty 2 (via Steam)

- Call of Duty 2 (via Steam)

- Prey (via Steam)

- Day of Defeat (via Steam)

Many games that are not on the Supported list will still work just fine. For a list of such applications, visit the CodeWeavers CrossOver Compatibility Center. At the compatibility center you can search for games, read about other users' experiences, and post tips and hints for other users.

B.2 Bottles

Important
CrossOver Games includes support for multiple bottles. A bottle is a virtual Windows environment with its own isolated C: drive, fonts, registry, and software.
Bottles are especially useful when installing unsupported software or when testing the behavior of a new application. They can also be used to run different versions of the same program (Internet Explorer, for example) at the same time.