CrossOver Users Guide

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Chapter 1

Introduction

CrossOver allows you to run your favorite Windows applications and games on an Intel Macintosh. Unlike similar products which run the Windows operating system on a virtual machine, CrossOver bridges directly between Windows software and OS X, allowing applications to run at full speed on your Macintosh desktop.

CrossOver is tested for performance with many common productivity applications such as Microsoft Word and Outlook, and also with many games, such as Half-Life 2. It also works well with a wide variety of other programs.

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

- An Intel Macintosh (CrossOver does not work on PowerPC systems)
- Mac OS X 10.10 or higher.
- 300 MB of available disk space

Tip
You will also need disk space for whatever Windows applications you plan to install.

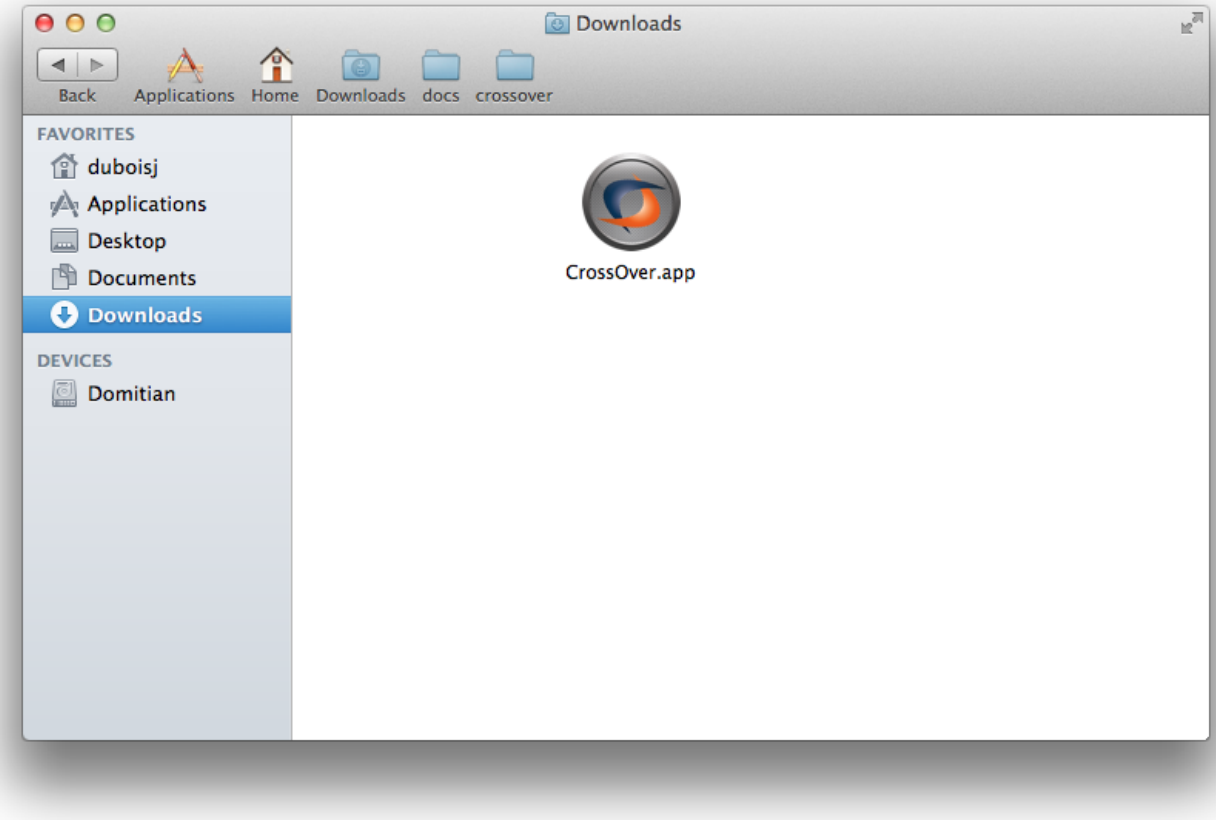
Chapter 2

Quick Start Guide

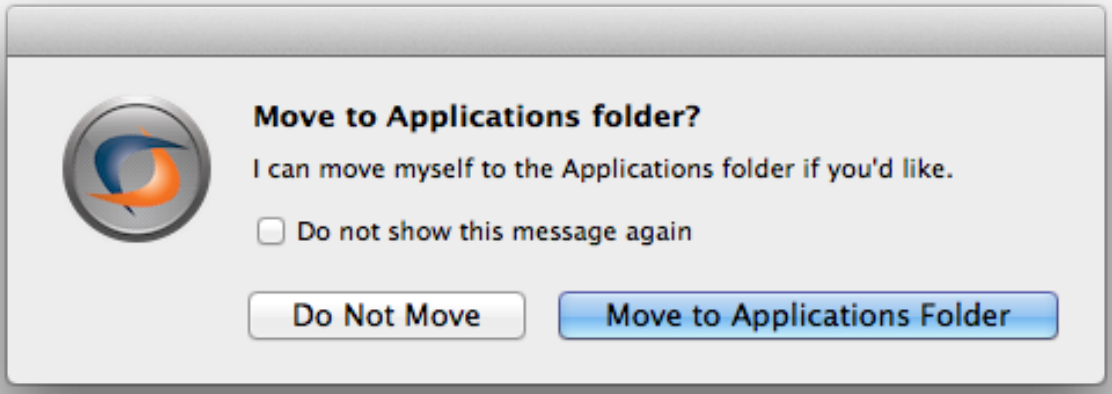
If you are familiar with other versions of CrossOver or you are comfortable making mistakes, this chapter should get you started running Windows software in a few minutes. For greater detail about the concepts and features in CrossOver consult the later chapters in this guide.

Installing and running When you download CrossOver from our website, your web browser should automatically create a `CrossOver` item in your `Downloads` folder.

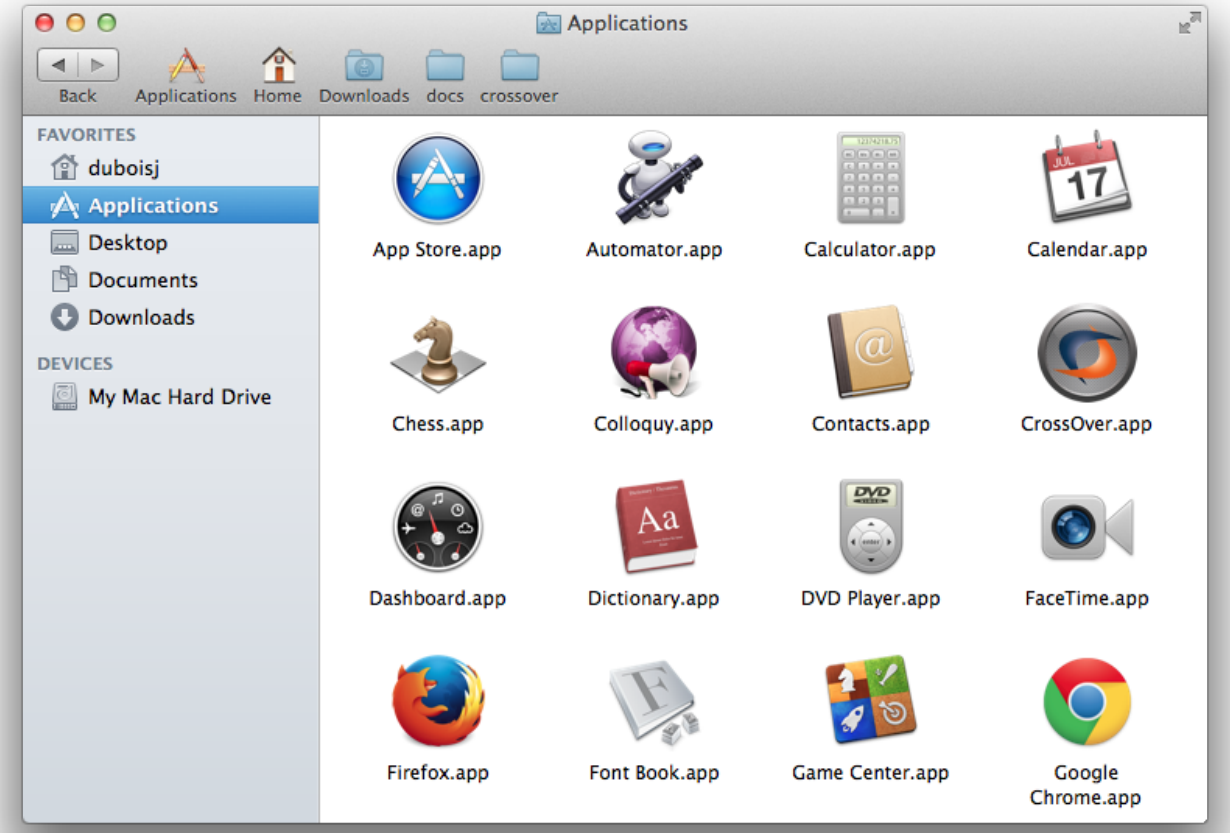
To run CrossOver for the first time, find the CrossOver icon (shown below) and double-click on it.



The usual place to install CrossOver is in the `Applications` folder. CrossOver will offer to move itself there the first time it runs. Unless you wish to install it in a custom location, click Move to Applications Folder.



To run CrossOver, browse to the `Applications` folder and double-click the CrossOver icon.

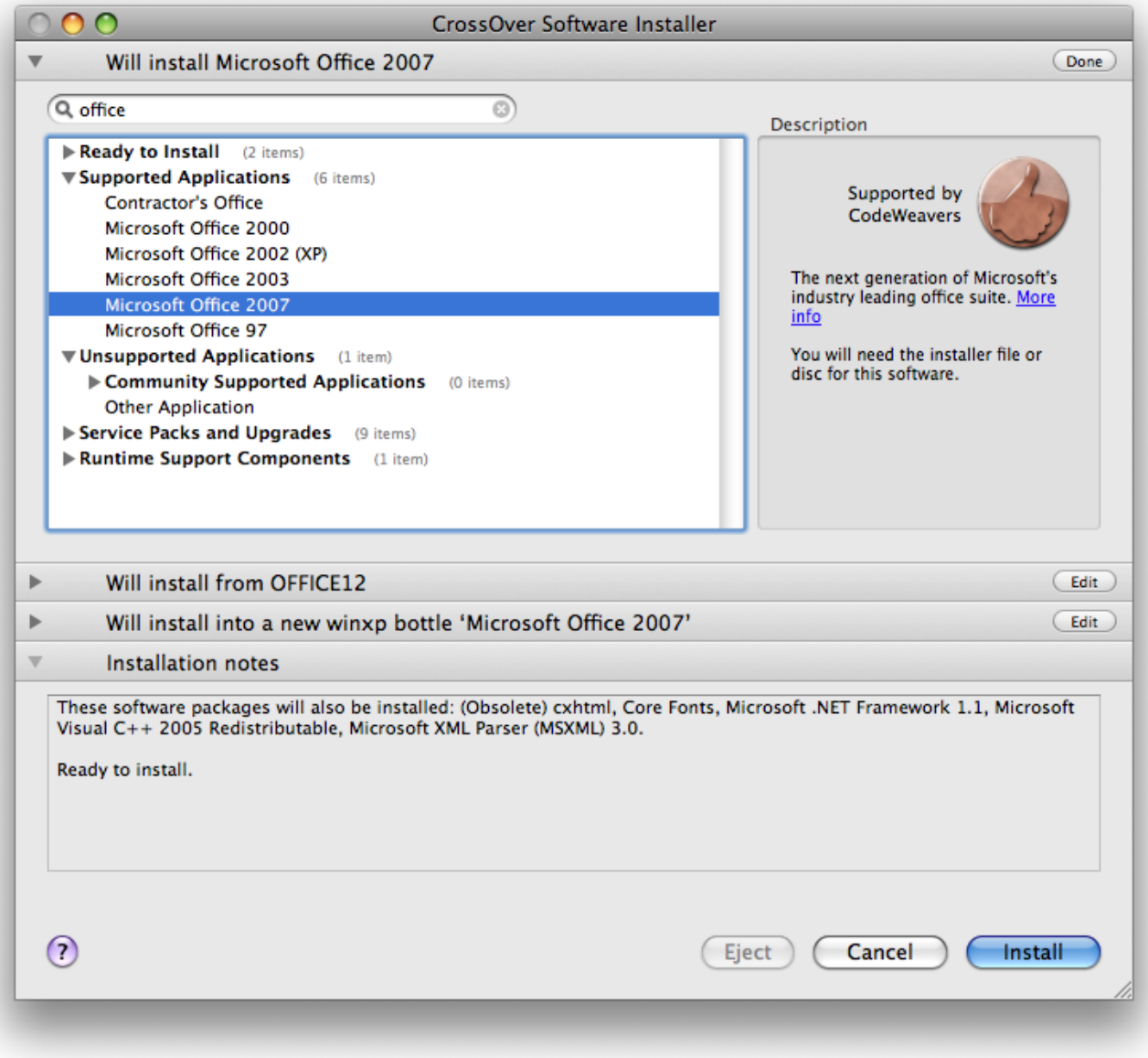


Installing a Windows program To install software off a CD or DVD, simply insert the disk now. CrossOver will detect the disk and offer to install.

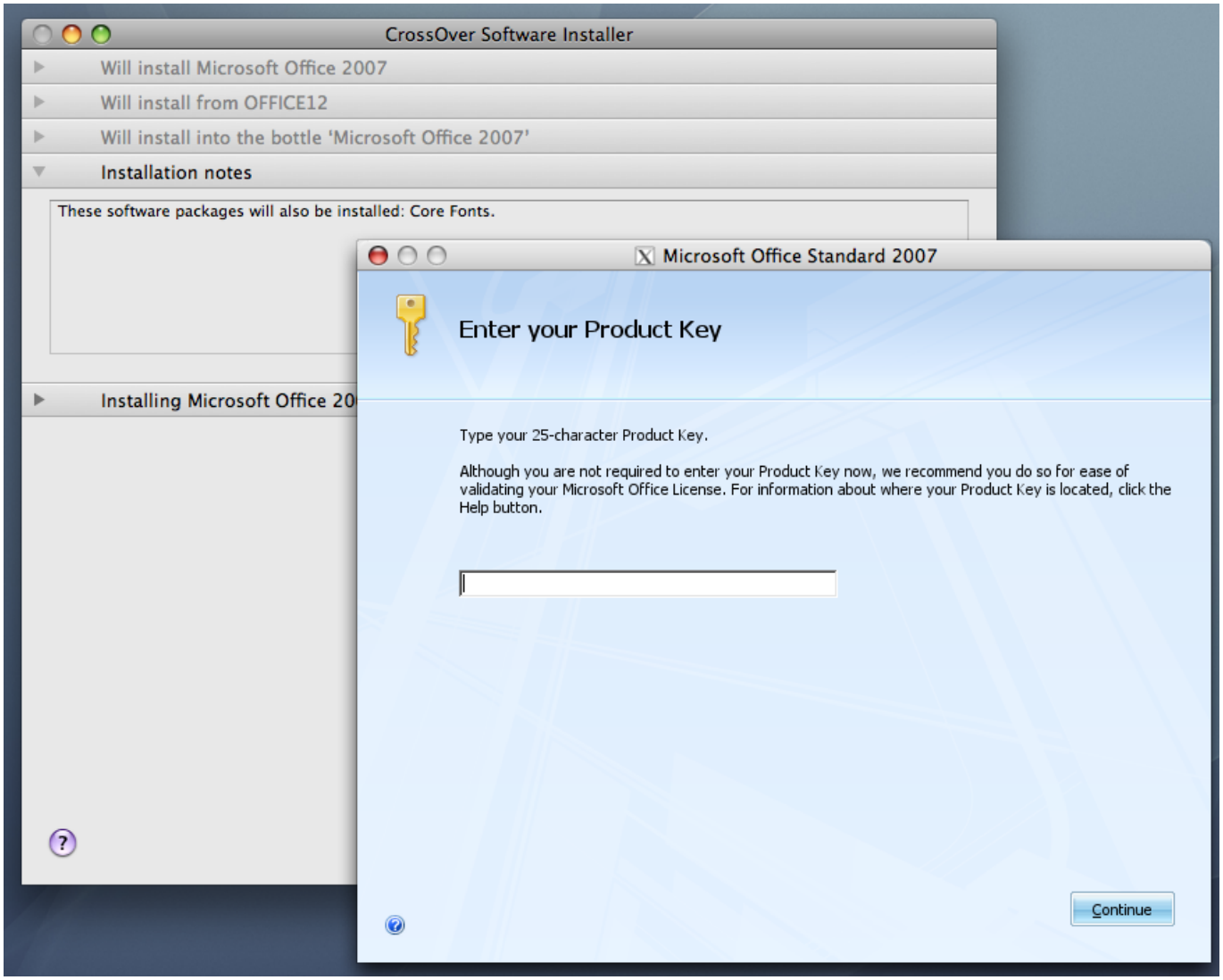
Alternatively, you can launch the CrossOver Software Installer from the CrossOver main window. When you launch CrossOver for the first time, you should see a window like the one pictured below:

You can launch the CrossOver Software Installer by clicking the button labeled Install Windows Software.

To install downloadable applications or applications for which you already have the installer file, click on the Configure → Install Software… menu. Then select the application in the list. If it is not in the list, select Other Application. Then follow the steps provided by the CrossOver Software Installer.

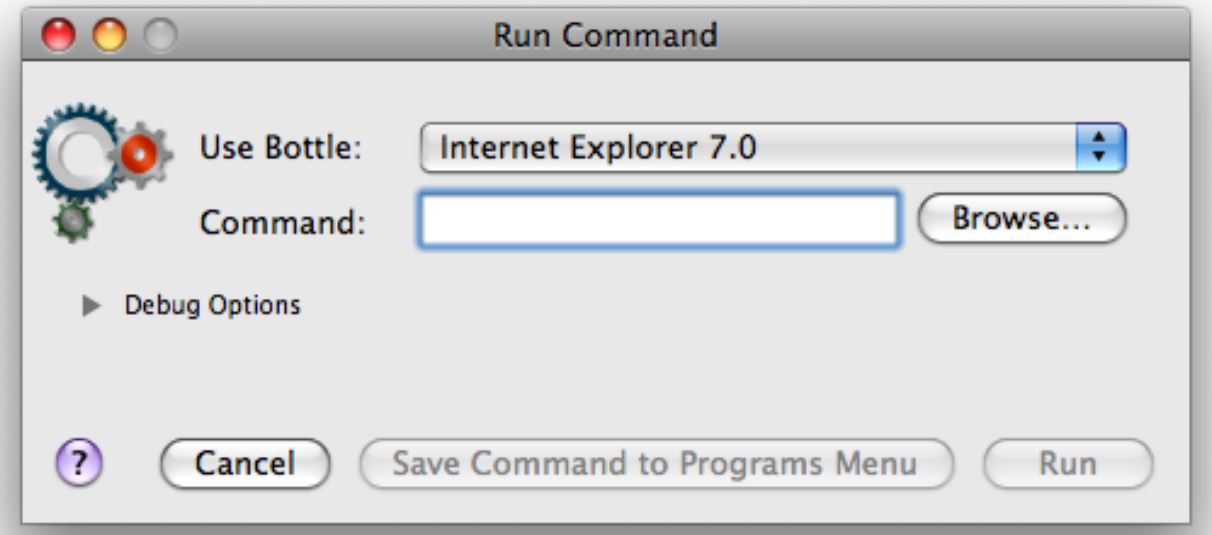


Once your application has been selected in the CrossOver Software Installer, the installer will guide you through the process of installing the Windows application you want to run.



Running a Windows program If all went well, CrossOver's main window is now populated with launchers for the Windows applications you have installed. You can click on these icons to run your Windows applications.

If your program did not create any icons, you can still launch it by clicking on the icon labeled Run Command.



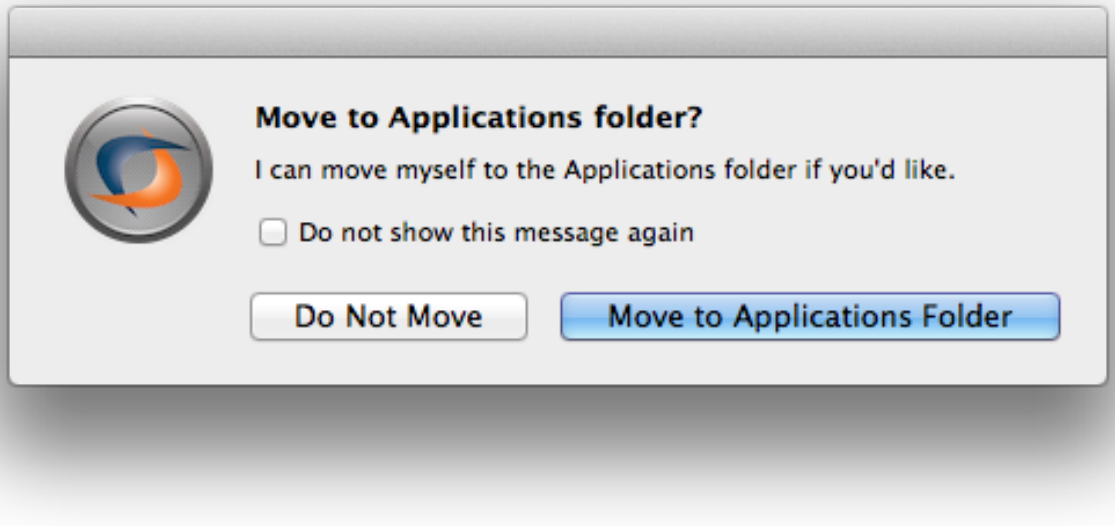
Have fun!

Chapter 3

Installing CrossOver

CrossOver can be installed anywhere on your system (via dragging and dropping).

The usual place to install CrossOver is in the `Applications` folder -- this will make it available to all the users on your system. Any time CrossOver runs from another folder, it will offer to move itself there. To allow CrossOver to do so, simply click Move to Applications Folder when CrossOver prompts you.



Note that if you have already put CrossOver in the `Applications` folder prior to the first time you run it, you will never see the dialog pictured above. The reason is that when CrossOver when CrossOver detects that it is already running from the `Applications` folder, it has no need to move itself because it is already where it expects to be.

Chapter 4

Registering CrossOver

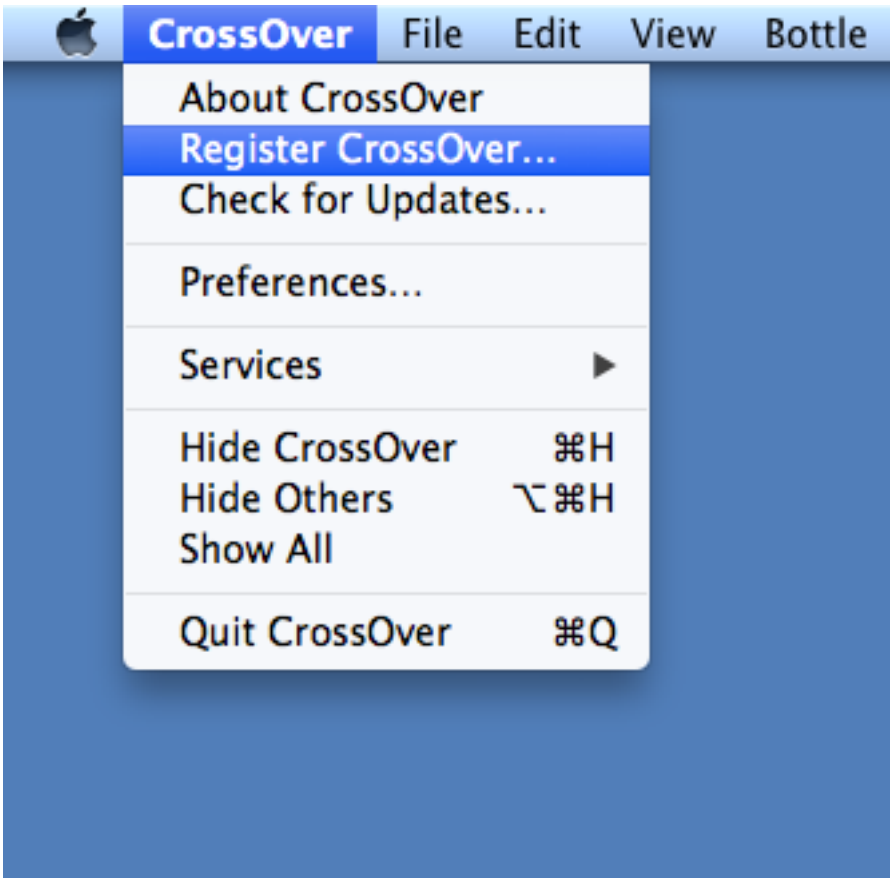
When you download CrossOver from the CodeWeavers website, you have a trial version which will last for 15 days. This trial version has all the functions and features of the full version. Any Windows software that works on a full version will also run in the trial version, and vice versa. The important limitation of the trial version is that bottles can only be used for 15 days. This means that any Windows packages that you install using the trial version will cease to work no more than 15 days after their installation.

CrossOver will warn you periodically of the approaching expiration.

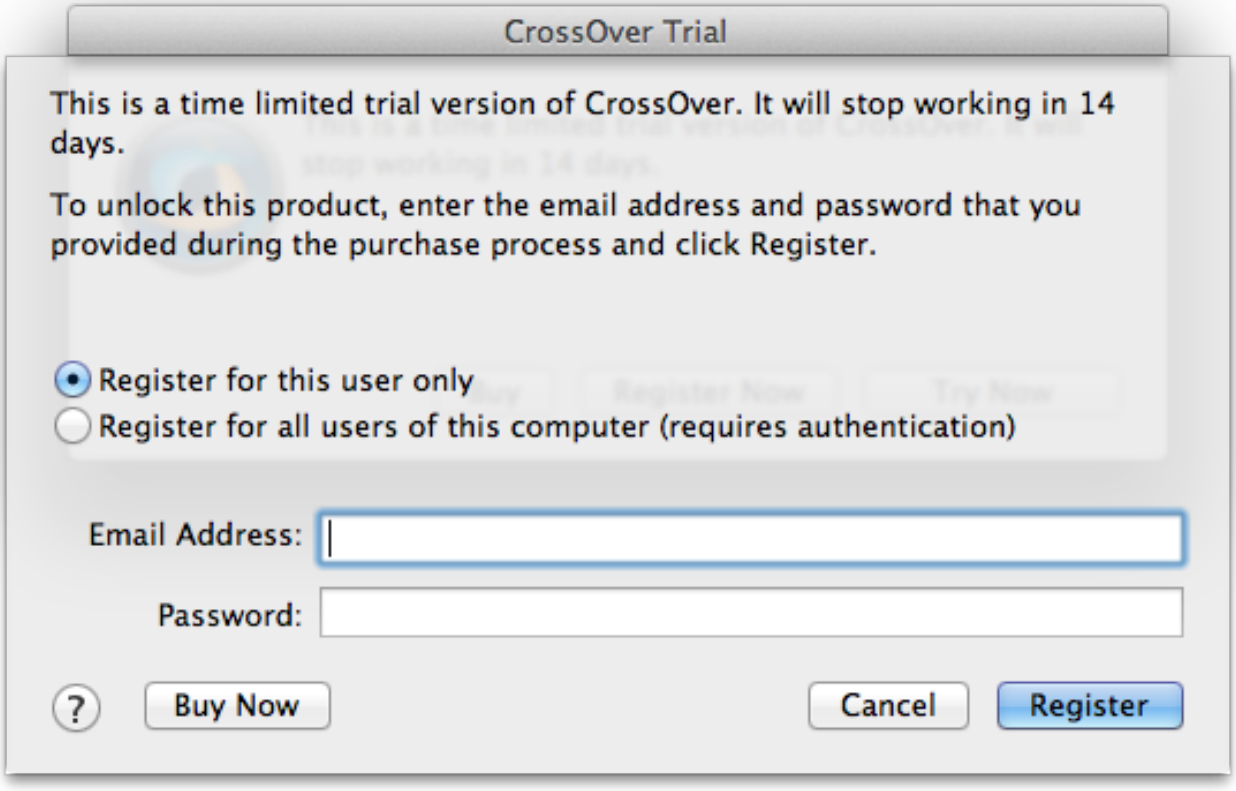
You may purchase CrossOver at any time from the CodeWeavers store. Doing so will allow you to permanently activate CrossOver so it will not expire.

When you visit the CodeWeavers website to purchase CrossOver, you will be asked for an email address and you will get to choose a password. You must remember the email address and password you enter into the website when you purchase CrossOver. You will use this same email address and password to register CrossOver.

You can then register CrossOver at any time from the CrossOver → Register CrossOver... menu, as pictured below (note: you must be connected to the Internet in order to register):



When you choose to register CrossOver, you will see the following dialog:



When you see the dialog pictured above, remember the email address and password you entered into the CodeWeavers website when you purchased CrossOver. Enter that same email address and password into the registration dialog and click the Register button. Your version of CrossOver will then be registered.

When you have registered CrossOver, all existing bottles and applications are unlocked.

Chapter 5

Installing Windows Software

5.1 Using the CrossOver Software Installer

The CrossOver Software Installer is an assistant that will guide you through the process of installing Windows software. It can be launched from the Configure → Install Software… menu.

Tip

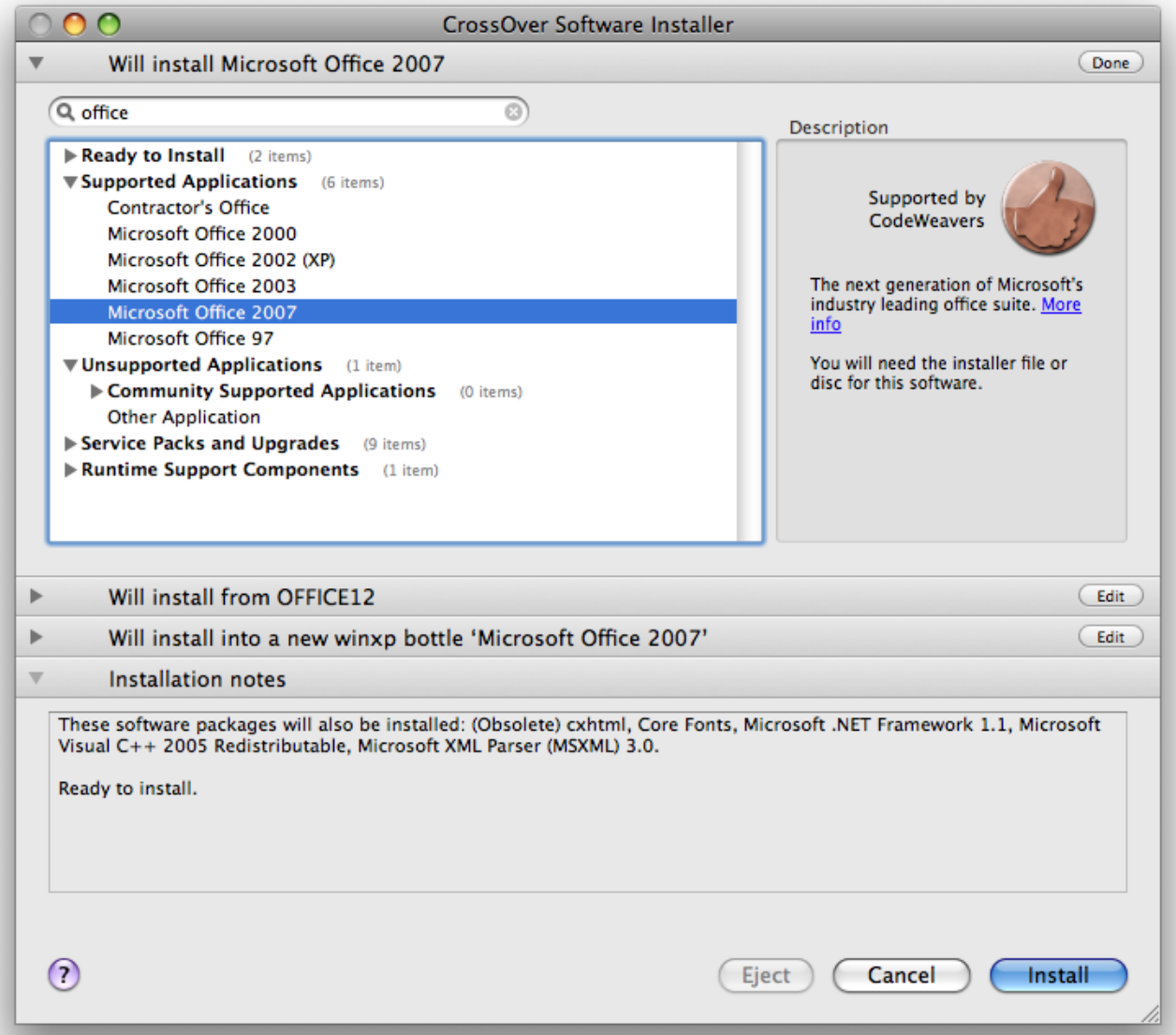
The CrossOver Software Installer contains extensive knowledge about the specific conditions and parameters that make applications install and run well. When software is installed without using it (for instance by running Wine directly) or when it is misinformed about what's being installed (for example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

5.1.1 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 assistant will immediately display the Install button. This means that it was able to pick good default values for all the other settings 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 installation by clicking Install.

If the assistant requires more information before installing, it will display a Proceed button. Clicking on it 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 assistant.



Supported Applications CrossOver has been tested and tuned to optimize the behavior of this select list of applications. CodeWeavers 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 long 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, select the Other Applicationoption. Keep in mind, though, that unsupported software may work poorly or not at all. In addition, installing it in an existing bottle may prevent the other Windows applications in that bottle from working. So 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 where you may find tips and tricks on getting it to work.

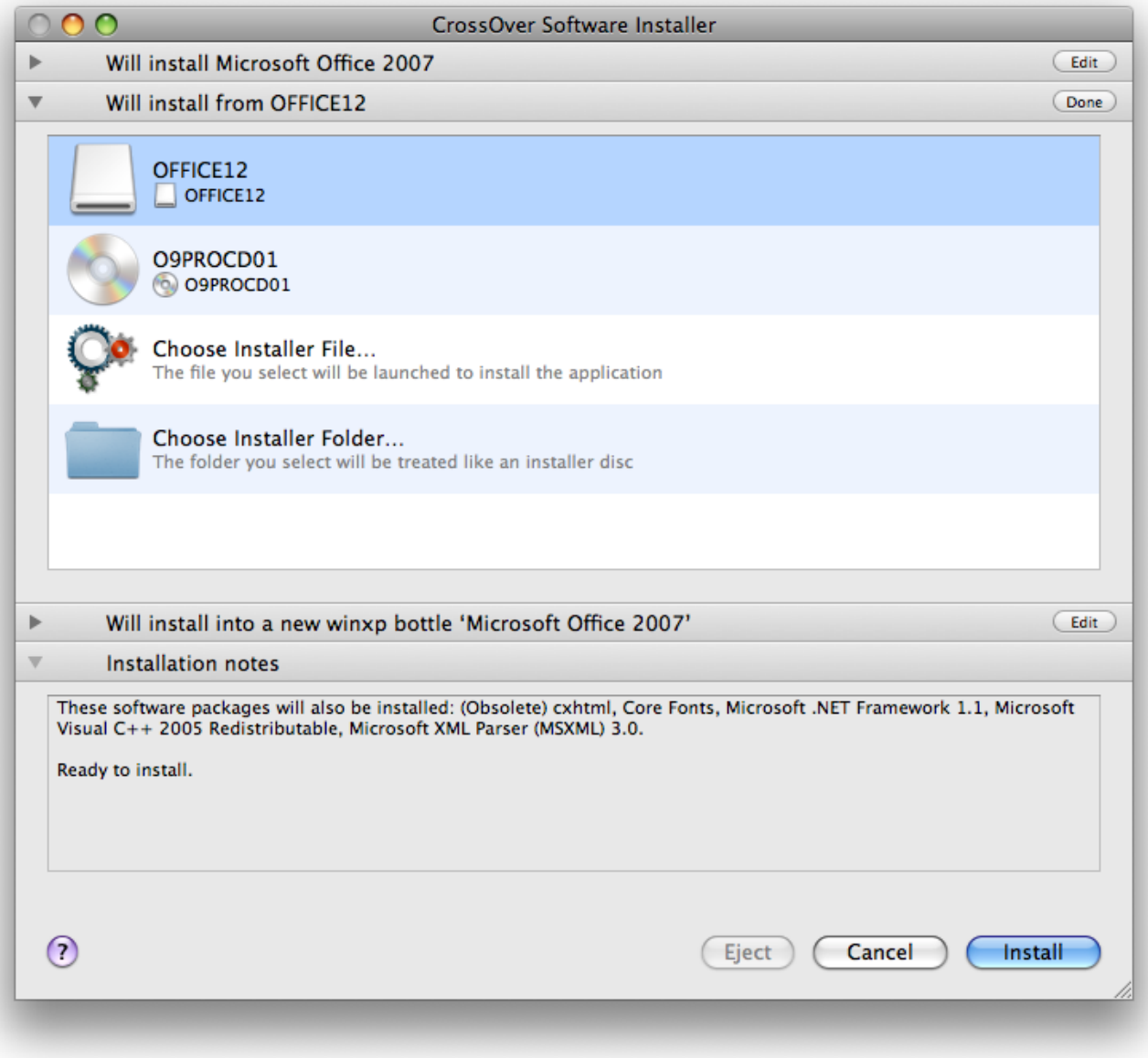
Service Packs and Upgrades Many applications require downloadable service packs to be applied for best performance. The advisability of each package is indicated by the medal rating.

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 installation of supported applications, and will be automatically installed as part of the predetermined installation process.

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

5.1.2 Selecting an installation source

When installing software from a CD or DVD, the assistant will allow you to pick a volume, file or directory to use for the installation.



Volume Selection At this point, you should be able to select any CD, DVD, or mounted ISO or disk image. When a volume is specified, the assistant 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.

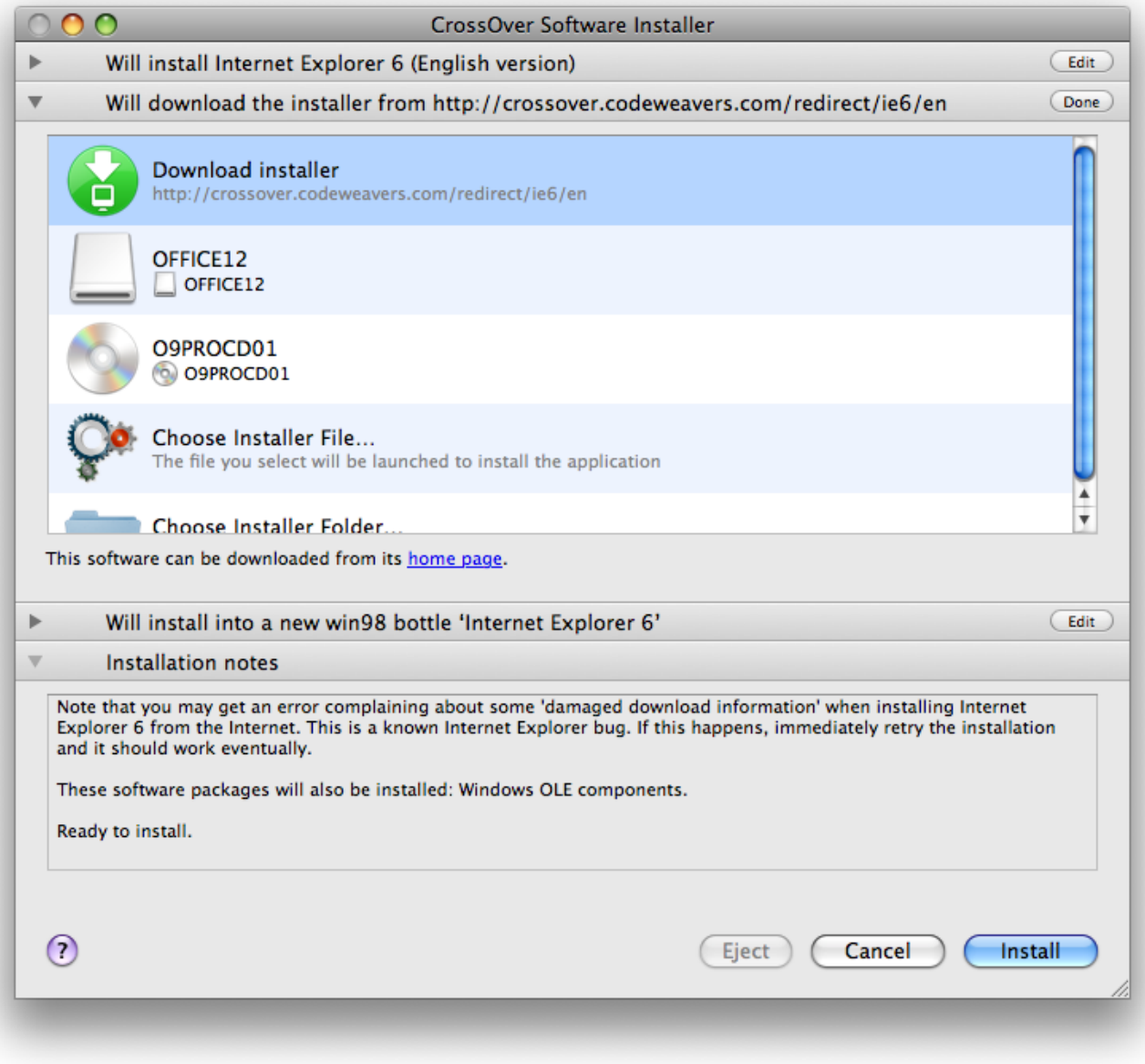
Choose Installer File... If you want to install software off your hard drive, or off a CD that contains several installers, select this option and specify the desired installer. In some cases, CrossOver will be unable to locate a default installer file when you select one of the CD options. In those 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 the selected folder as if it was an installer disk. So if it does not contain an obvious installer or autorun file the installation will likely fail.

5.1.3 Downloading an installer

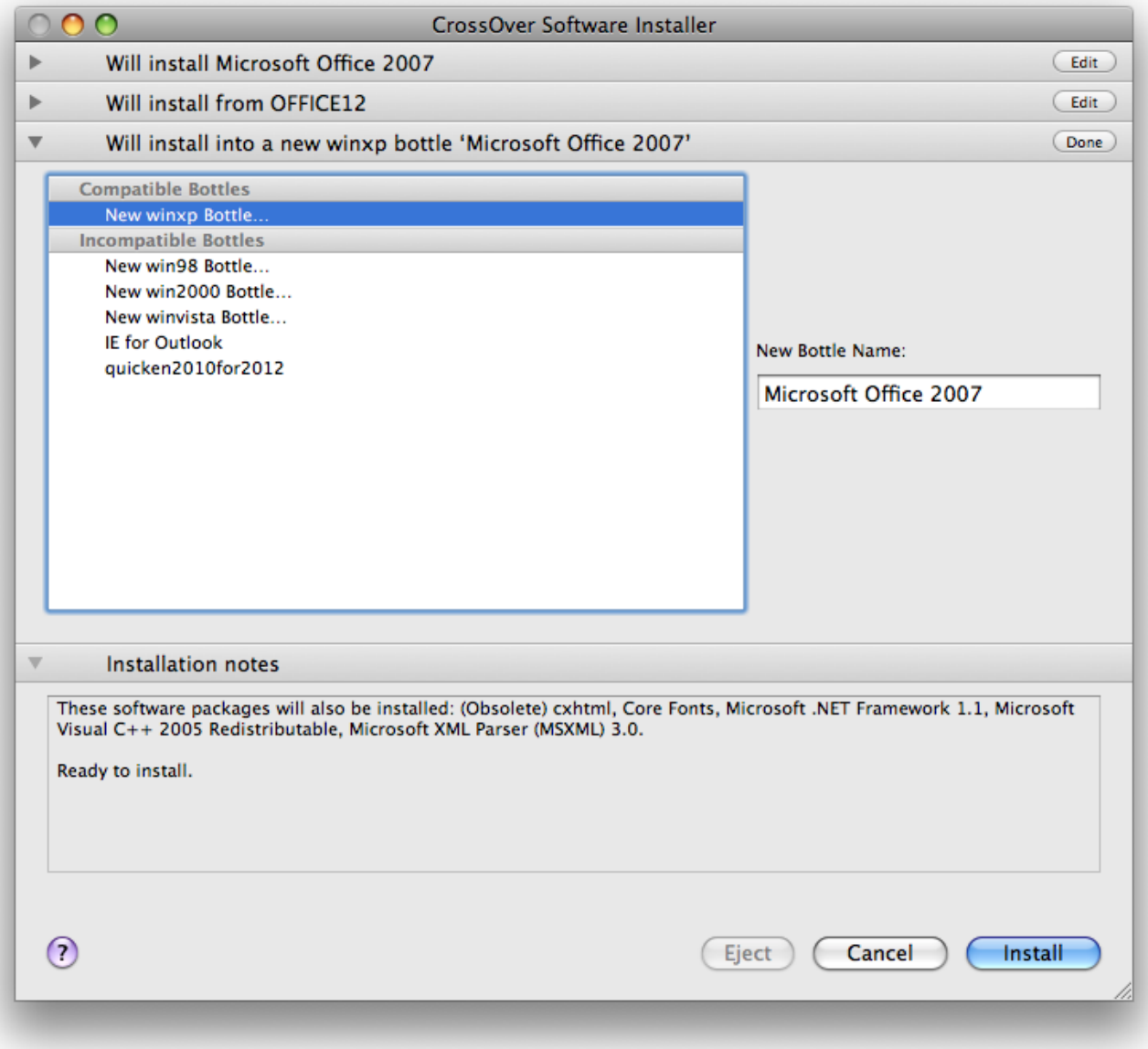
Many applications can be downloaded from the Internet. For most of those, the assistant can automatically download the installers for you. Make sure that you have an active connection to the Internet if using this facility.



The assistant will cache 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.

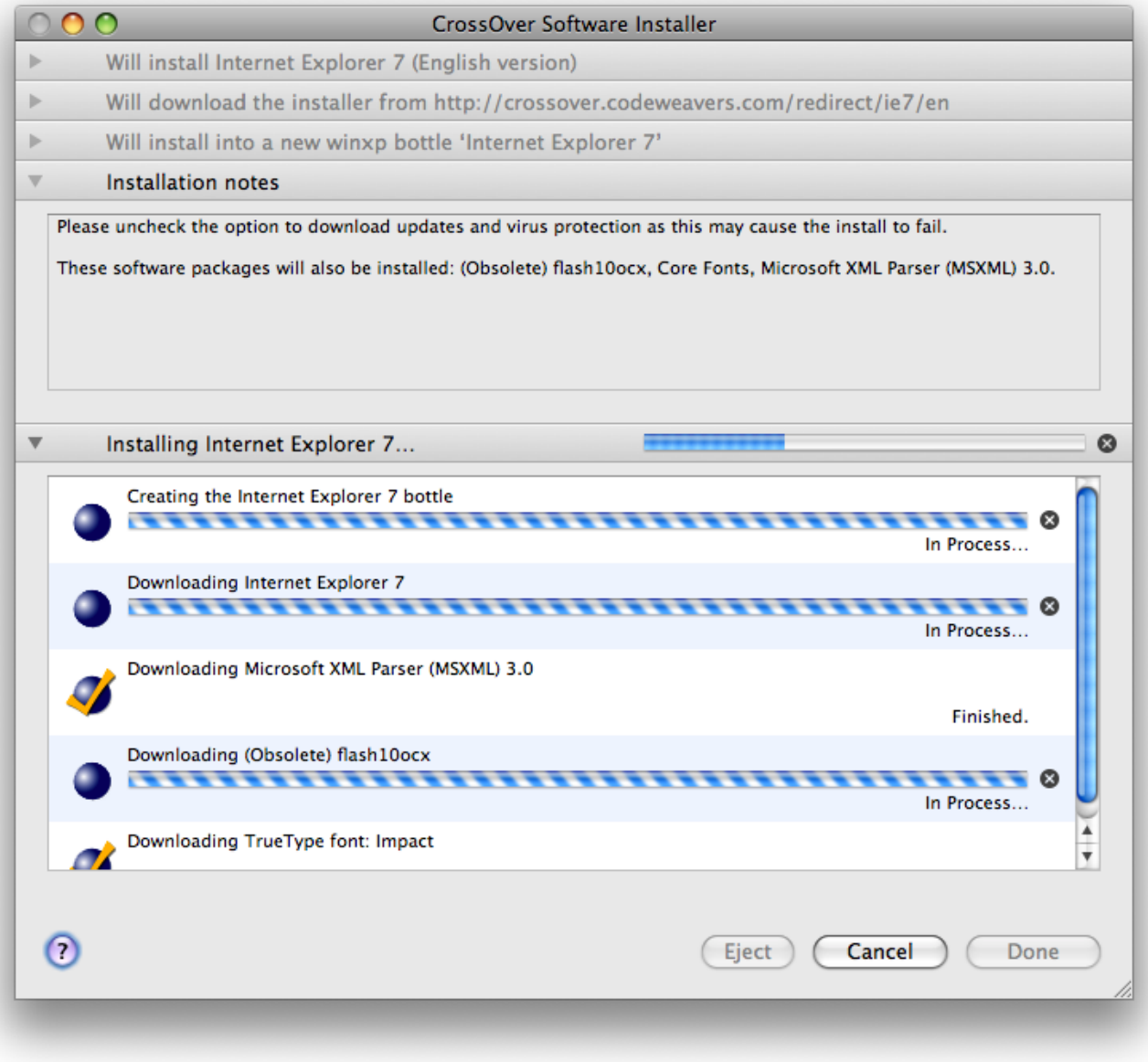
5.1.4 Selecting a bottle for installation

Important
In most cases, CrossOver will install the software into 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 select the bottle that contains the software to upgrade.



5.1.5 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 assistant 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.

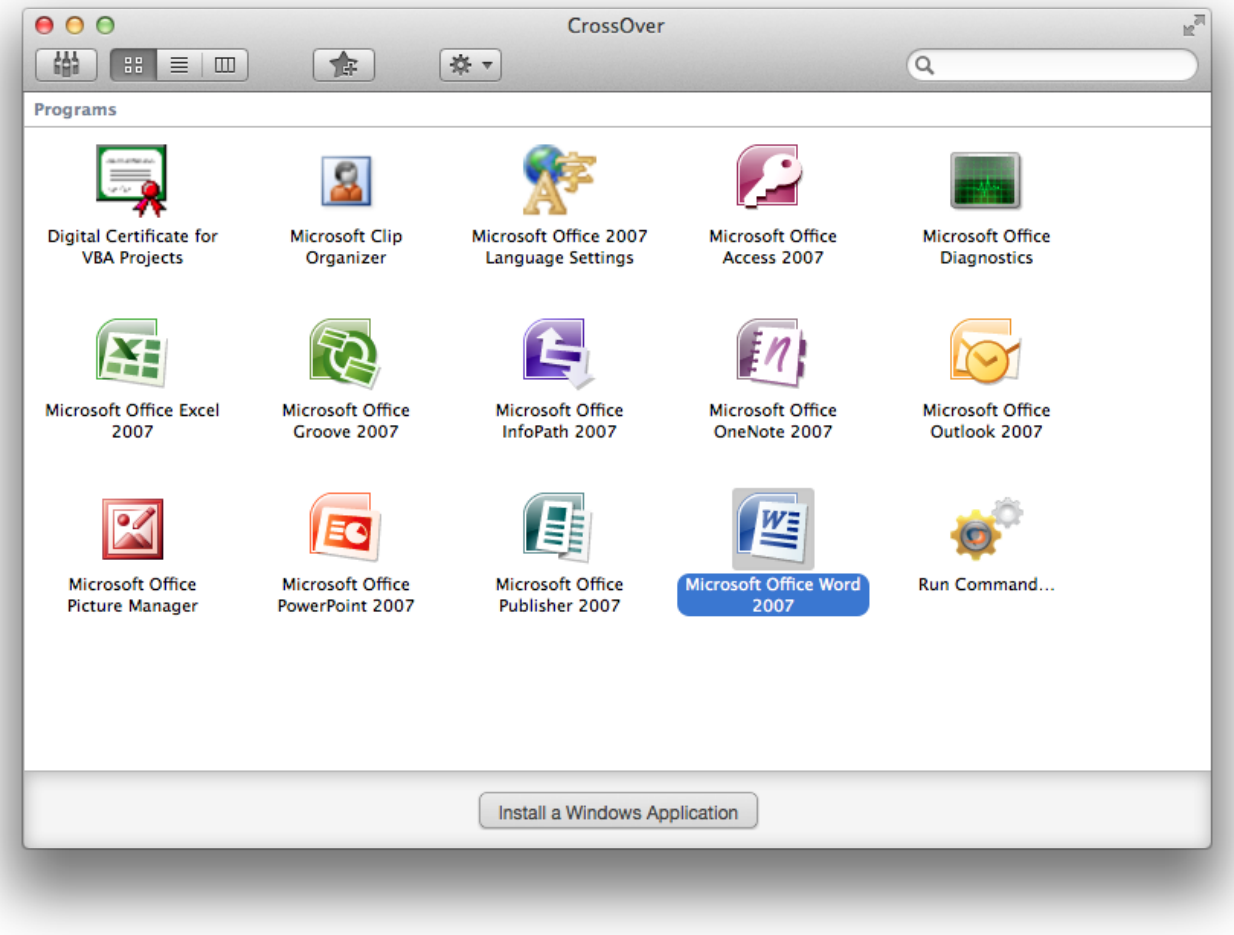
Chapter 6

Using CrossOver

6.1 Running Windows applications

6.1.1 Running Windows applications from the CrossOver main window

After you have installed Windows software using CrossOver, the CrossOver main window will display a series of icons like those pictured below:



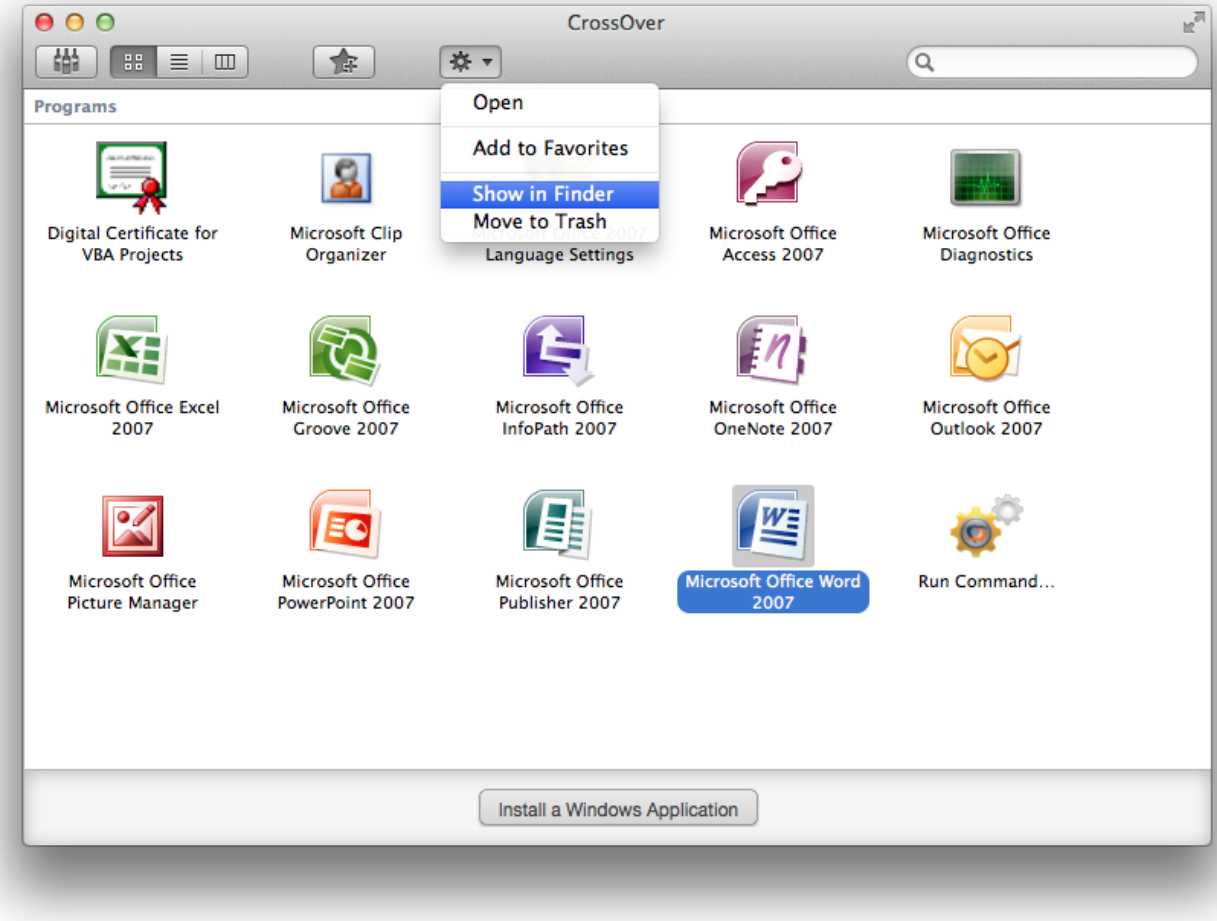
This window displays an icon for any shortcut created during the installation of a Windows program.

You can run any one of the Windows applications you have installed by double-clicking on its icon. You can also drag icons from CrossOver's main window to the OS X Dock and save them there for future use.

6.1.2 Running Windows applications through the Finder

When you install a Windows application, CrossOver creates a launcher for that application which is visible in the Finder.

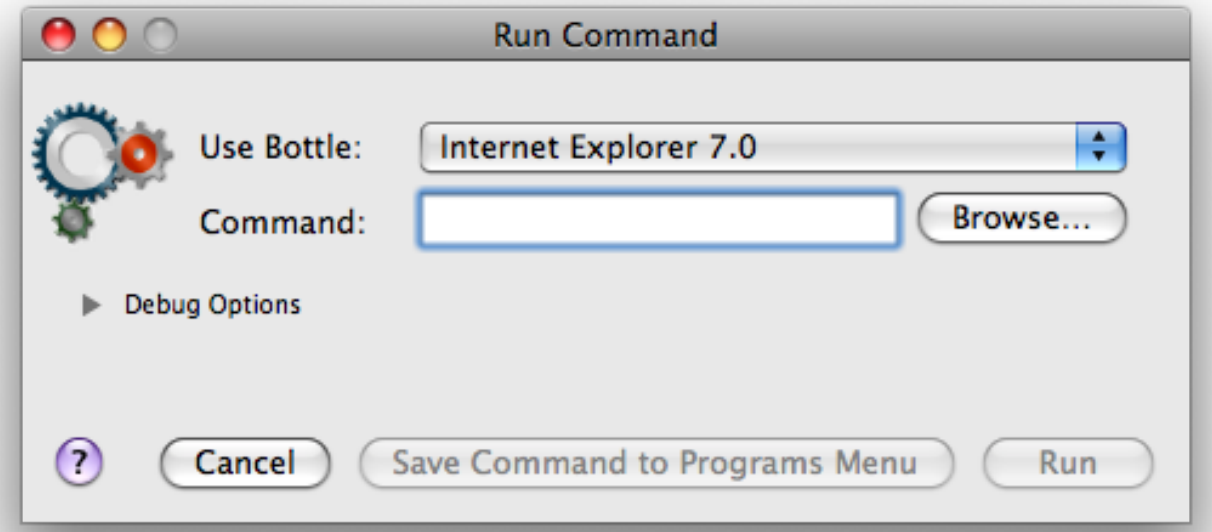
To see the launchers CrossOver creates in the Finder, first select the icon for the Windows application you are interested in. You can then display the "Action Menu" by pressing the gear-shaped button on the toolbar of CrossOver's main window. The "Show in Finder" action will cause CrossOver to open a Finder window showing the launcher for your selected Windows application.



After the Finder window with your launchers has opened, you can use these launchers the way you would use any other OS X application from within the Finder.

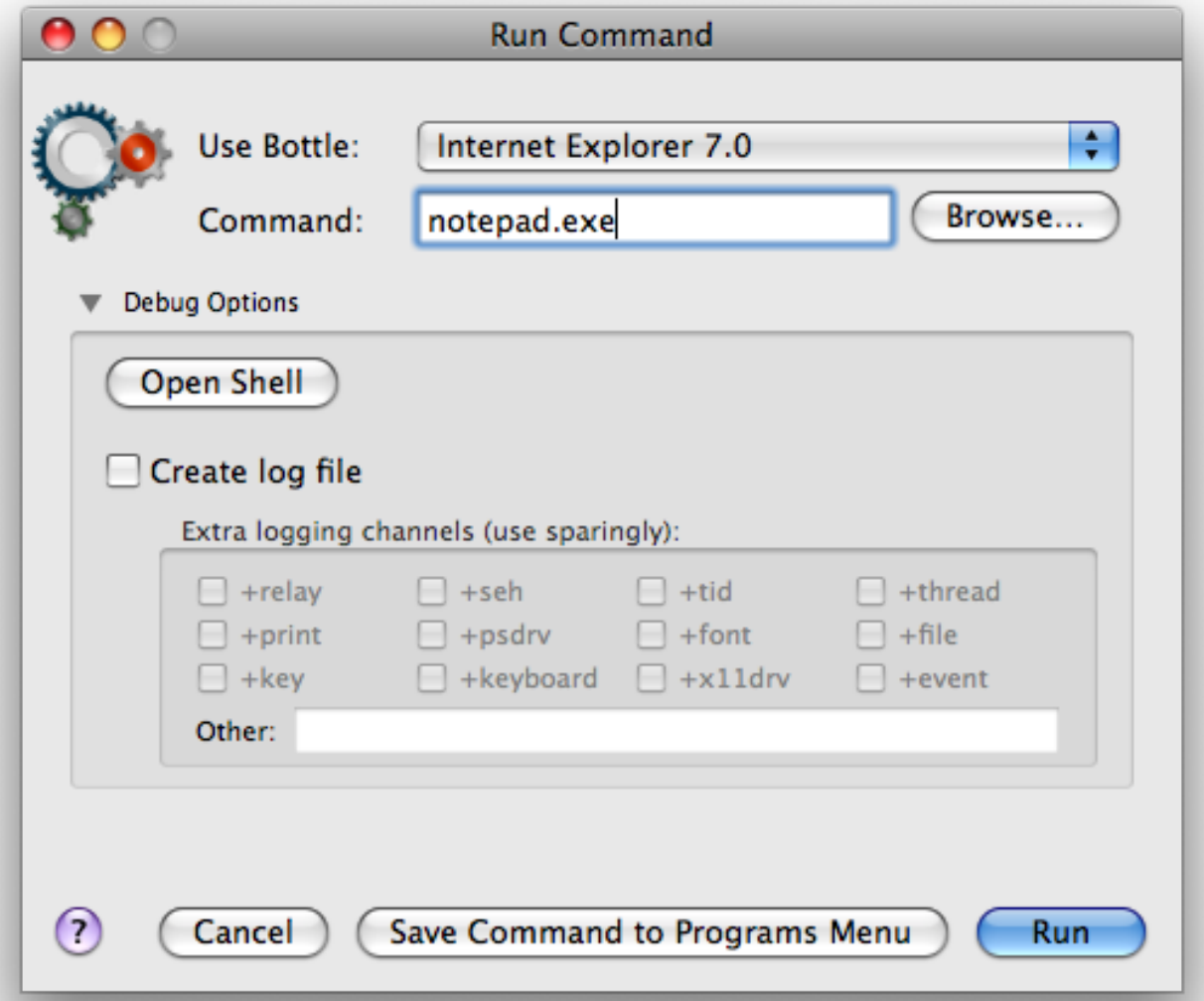
6.1.3 Running Windows applications with the Run Command dialog

The icon labeled Run Command 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 don't create icons or shortcuts.



If you need to run the same command regularly you can create a shortcut for it by clicking on the Save Command to Programs Menu button.

This dialog provides several logging and debugging functions as well. These options may be useful if you talk to CodeWeavers tech support or if you are trying to make an unsupported application behave. To display these options, click on the Debug Options reveal control.



Open Shell This option will launch an interactive shell, preconfigured for use with the selected bottle. This may be useful for running text-only programs.

Create log file If this option is turned on, CrossOver will prompt you for the name and location of a log file before the command is run. This log file will contain a variety of debugging information about the run.

Turning on specific logging channels will determine what information is written to the log file. Many of these channels include a large volume of information, so generally they should be used singly or in pairs.

6.2 Working with bottles

Whenever you install a Windows application using CrossOver, CrossOver creates a virtual Windows environment which it uses to run your application. These virtual Windows environments are called bottles.

You do not need to know anything about bottles to perform simple actions with CrossOver. You can install and run Windows applications without knowing how CrossOver uses bottles.

CrossOver has tools which you can use to manage your bottles if you want more fine-grained control over your virtual windows environments. To begin working with bottles using CrossOver, you can reveal the bottles sidebar by clicking on the "bottles" button in window bar of the CrossOver main window.

The bottles sidebar reveals a list of virtual windows environments which CrossOver can use. By default, CrossOver creates a new bottle any time you use the CrossOver Software Installer to install a Windows application from CrossOver's list of known software.

A bottle is a complete virtual Windows environment. Each bottle contains a unique C: drive and all its standard folders: Windows, Program Files, etc. A bottle also contains a Windows registry; a full set of most CrossOver settings; one or more Windows applications; and any user data which you have saved there.

CrossOver allows you to maintain multiple bottles in one CrossOver installation. This is like having several different Windows machines operating together on your computer. This is useful any time you want to install multiple applications yet prevent them from interacting with or damaging one another. For instance you could test out a new version of Microsoft Office in one bottle while keeping an older one for your day to day needs in another bottle.

Multiple bottles are also useful whenever a particular application requires special system settings that are otherwise undesirable. It is also possible to maintain bottles that emulate different Windows versions. For instance you could run an ancient application that runs best in a Windows 98 bottle side by side with more modern ones that require a Windows XP bottle.

The bottle sidebar allows you to create, delete, and modify the bottles in your CrossOver install. In many cases, the CrossOver Software Installer will create the bottles you need automatically. The features available in the bottle action menu give you more direct control if you need it.

6.2.1 Adding and removing bottles

You can add a new bottle of your own by clicking the button labeled with a plus sign ('+') symbol in the bottles sidebar.

When you add a bottle you can give it a name and set a "Bottle Type" for the bottle. The bottle type specifies the version of the Windows API which CrossOver will emulate in the new bottle. The "Windows XP" bottle type is the default and is usually the

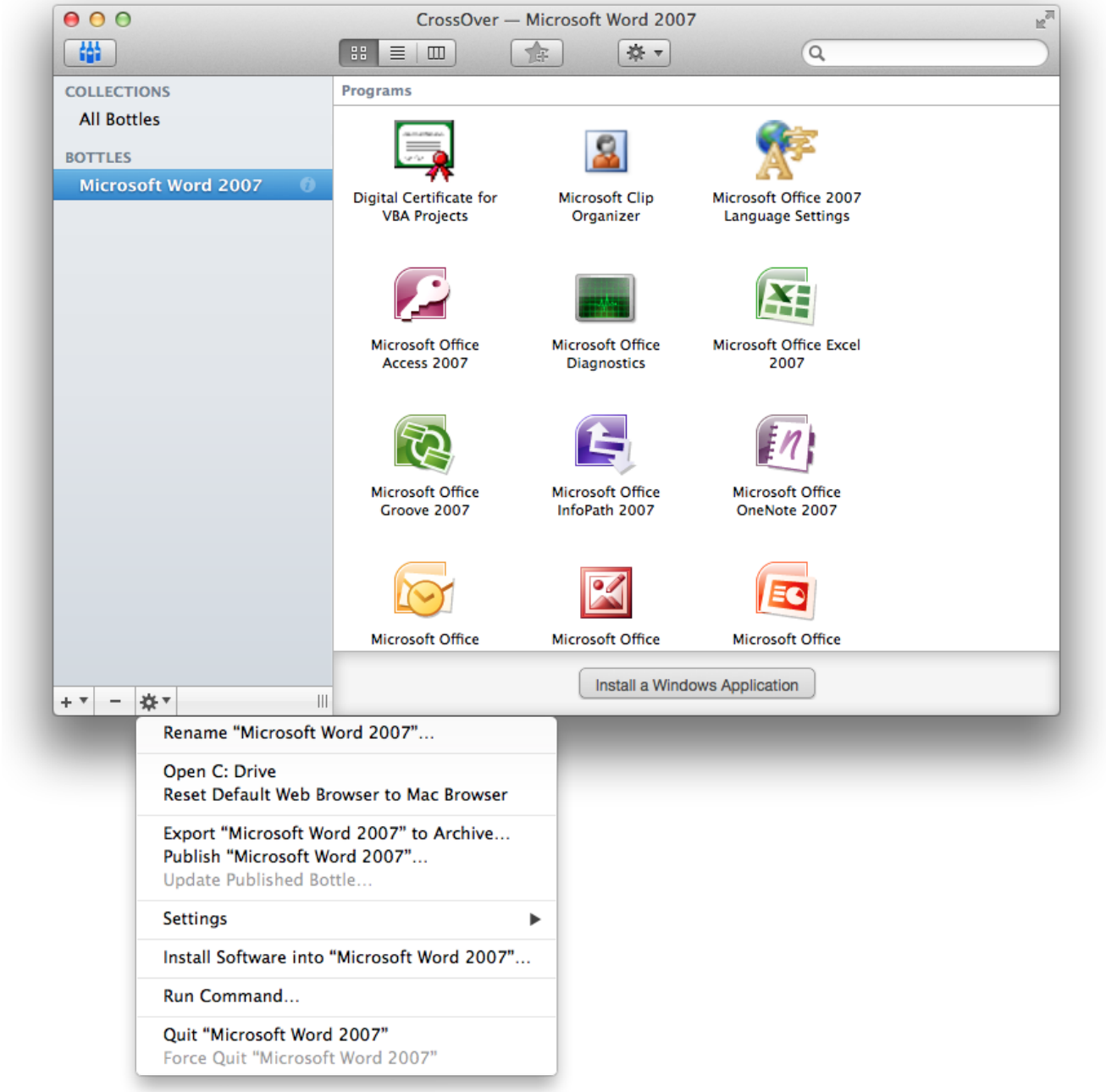
best choice. If you are experimenting with your own application and it does not run when you install it in a "Windows XP" bottle type, it may be worth experimenting with other types.

You can remove a bottle from your computer by using the button labeled with a minus sign ('-') at the bottom of the bottle sidebar in CrossOver's main window. This is one way to uninstall a Windows application which you have previously installed with the CrossOver Software Installer.

If you chose to delete a bottle, it is important to remember that a bottle is an entire virtual Windows environment. It can include both the applications you have installed and also your own data. Deleting a bottle will remove it from your computer permanently. Be sure you have saved any data you need before you chose to delete a bottle.

6.2.2 Using the bottle action menu

Clicking the gear-shaped icon at the bottom of the bottle sidebar reveals an action menu, pictured below, which operates on the selected bottle.



The bottle action menu allows you to manipulate the selected bottle with the following actions:

Rename Rename the selected bottle.

Open C: Drive Open a Finder window displaying the contents of the current bottle's C: drive.

Reset Default Web Browser to Mac Browser When a Windows application running in the selected bottle makes a request to open a URL in a web browser, use the default native OS X browser to handle the request. (Otherwise, in some circumstances, a Windows browser running under CrossOver may be used to open the URL.)

Export Bottle to Archive... Create an archive of the selected bottle.

Publish Bottle... This command is discussed in the advanced options section of this user guide.

SETTINGS

- **Default Bottle** Check this to make the selected bottle the default bottle. The default bottle is displayed in boldface in the bottle list. It is used to handle files and documents that are passed to CrossOver directly without any indication about which bottle should be used.
- **Use Legacy X Window System** Prior to CrossOver 12.5.0, CrossOver used a technology called the X Window System to control input such as keyboard and mouse movement, as well as output such as drawing windows and images to the screen. CrossOver no longer uses this technology by default, so the Legacy X Window System is disabled by default. Use this setting to enable it for the selected bottle.
- **Performance Enhanced Graphics** Beginning with CrossOver 13, CrossOver includes a feature which should enhance performance for 3D games in most situations. This feature is enabled by default. Use this setting to disable it for the selected bottle.

Install Software Into... Use the CrossOver Software Installer to install software into the selected bottle.

Run Command... Run a command in the selected bottle using the Run Command dialog.

Quit Close all Windows applications which are currently running in the selected bottle.

Force Quit If you have already tried to quit the bottle and failed, selecting Force Quit should allow you to stop any processes which are still running inside the bottle. Using this option may result in lost work if you have unsaved changes.

6.2.3 Using Control Panels

When you have selected a bottle in the CrossOver Main Window, a new section appears in the main window labeled "Control Panels." This section contains icons for control panels available for the selected bottle. You can launch any one of these control panels by double-clicking its icon.

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.

Game Controllers This tool allows you to configure game controllers or joysticks.

Internet Settings This tool provides access to certain network-related configuration.

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 This tool 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 with it.

6.3 Stopping misbehaving programs

There may be occasions when Windows applications become unstable or stop responding. You can terminate all of the applications running in a given bottle by clicking on the Quit entry in the bottle action menu from CrossOver's main window.

Tip
Forcing a bottle to quit will cause all that bottle's Windows applications to exit. Any unsaved changes to documents will be lost.

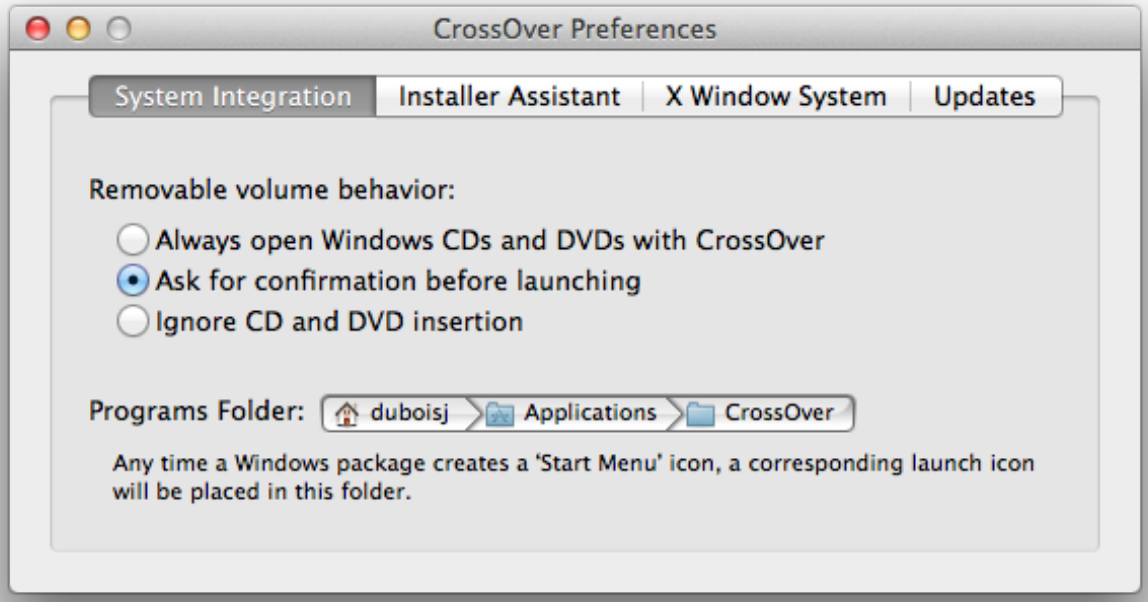
Chapter 7

Preference Settings

The CrossOver preferences are available from the CrossOver → Preferences menu. The preference settings modify the behavior of CrossOver as a whole, affecting all bottles uniformly.

Preferences are stored separately for each user of a system, so changing your preferences will not impact anyone else on your Mac.

7.1 System Integration Preferences



These settings modify the way that CrossOver interacts with OS X and the Finder.

Removable volume behavior Anytime you insert a disk or attach a USB volume to your Mac, CrossOver can scan that volume, detect Windows installers, and offer to install them. By default, CrossOver will perform this scan automatically and ask for confirmation before installing anything. You can change this setting to override this confirmation, or to instruct CrossOver to ignore disk insertion altogether.

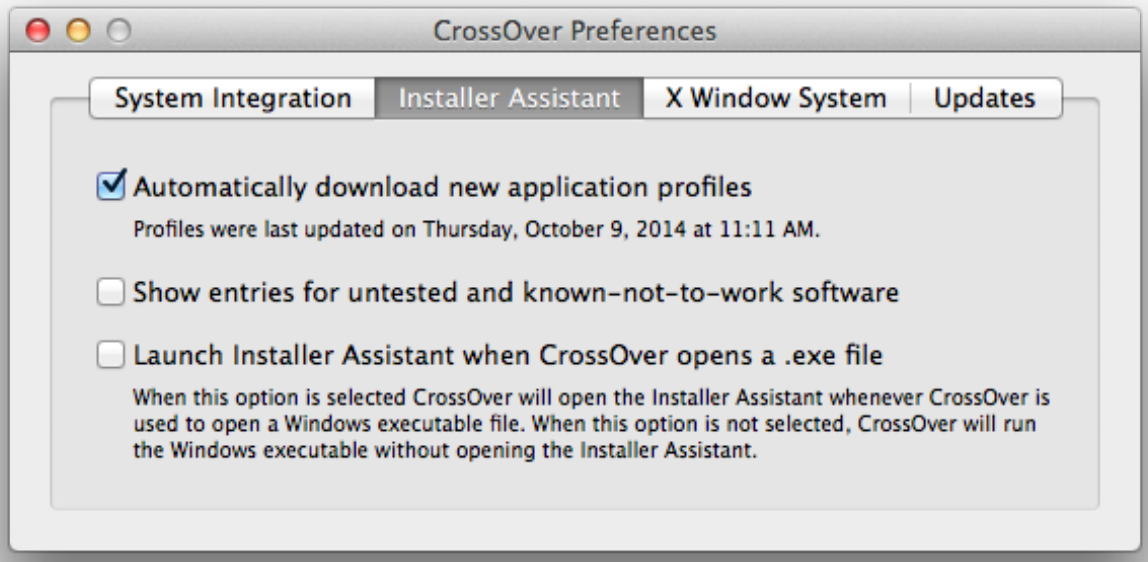
Default value: ask for confirmation before launching

Programs Folder Whenever an entry is added to the CrossOver Programs menu, an icon is added to a Finder folder for easy launching of that program in the future. This setting lets you specify where these icons are created.

A "~" character in this field represents your home folder.

Default value: `~/Applications/CrossOver`

7.2 Installer Assistant Preferences



These settings govern the behavior of the CrossOver Software Installer.

Automatically download new application profiles CodeWeavers staff and volunteers are constantly updating, refining, and adding to the list of community supported applications via the CodeWeavers CrossOver Compatibility Center. If this option is enabled, CrossOver will periodically synchronize itself with the full list of applications on the website.

Even if this option is turned off you can still install particular applications from the website via the Install button present on many pages.

Default value: on

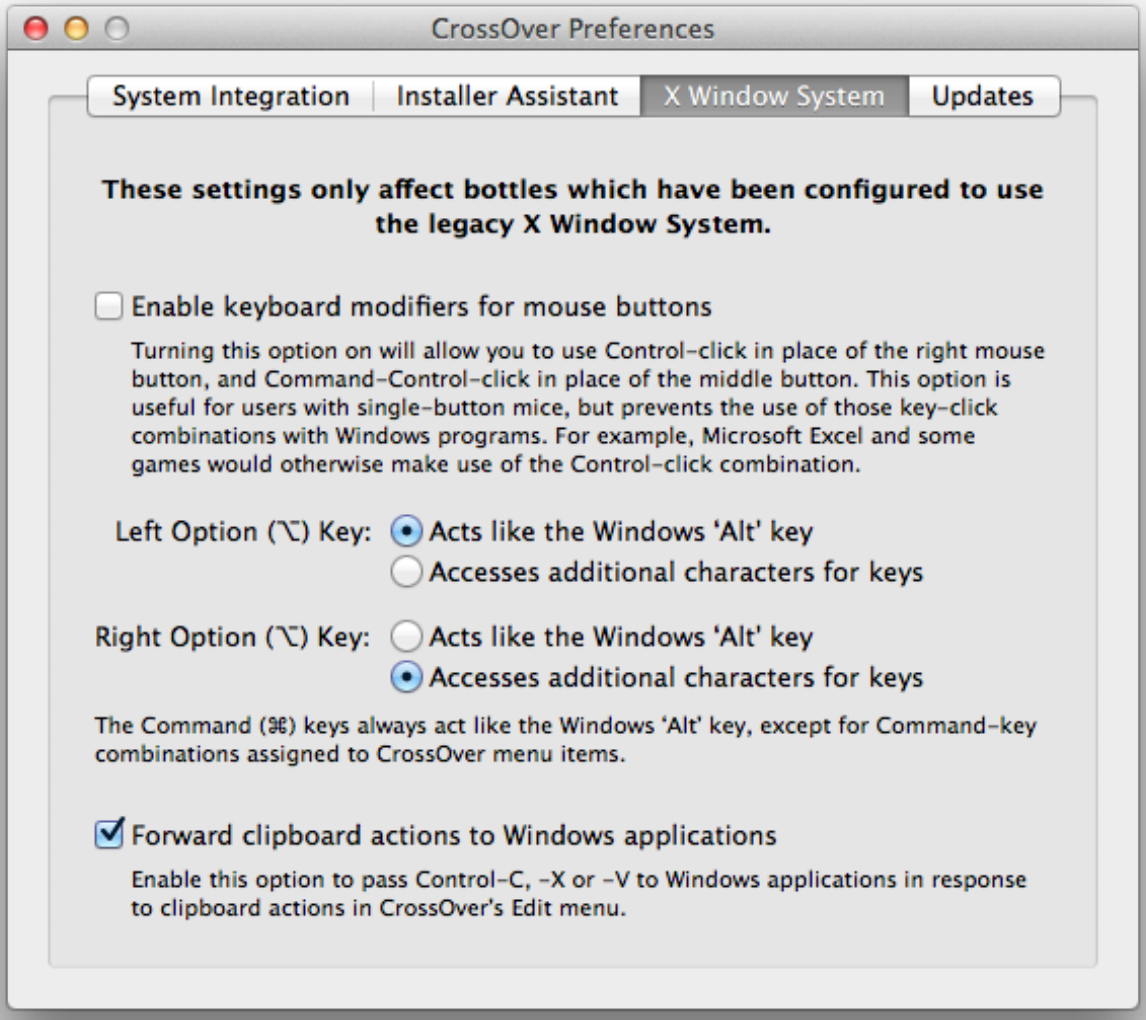
Show entries for untested and known-not-to-work software Our product and website keep track of many applications that do not yet work with CrossOver. If you are experimenting with or developing for one of those applications, it may be useful to turn on this setting in order to see such entries in the Installer Assistant.

Default value: off

Launch Installer Assistant when CrossOver opens a .exe file When this option is selected CrossOver opens the Installer Assistant whenever CrossOver is used to open a Windows executable file. Otherwise CrossOver simply runs the Windows executable.

Default value: on

7.3 X Window System



These settings only affect bottles which have been configured to use the legacy X Window System.

Because Windows PCs and Macs typically have different keyboard layouts and different mice, CrossOver provides several mechanisms for adapting your Mac input devices for use with Windows software.

Enable keyboard modifiers for mouse buttons If you have a one-button mouse you may wish to enable this setting in order to right-click in Windows applications. Turning this on may interfere with some game controls.

Default value: off

Option Key assignment Typically the Option key is assigned to act as an 'Alt' key in Windows. If your keyboard requires use of the Option key for character input (for instance, the use of accents or punctuation), then you may wish to set one of your Option keys to Accesses additional characters for keys instead.

Default value: depends on keyboard setup

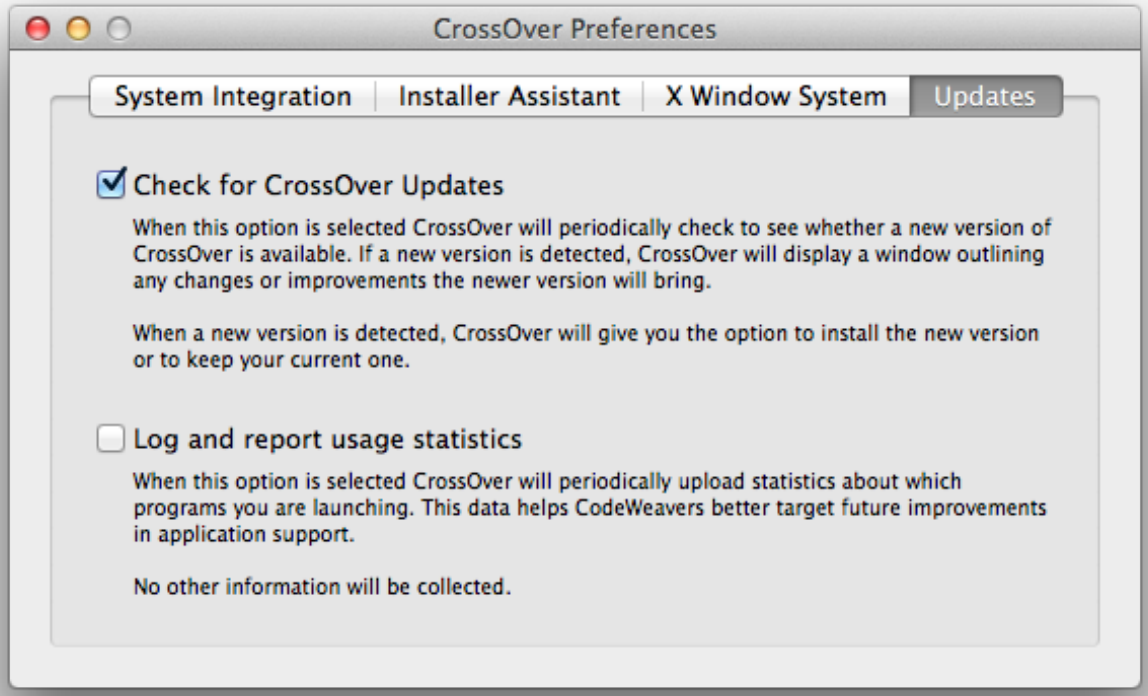
Forward clipboard actions to Windows applications On a Macintosh, clipboard actions (cut, copy and paste) are performed using the Command key: Command-X, Command-C and Command-V. On Windows the same actions are performed via Ctrl-X, Ctrl-C and Ctrl-V.

The control-key combinations are always available in Windows programs running with CrossOver. When interacting with Windows and native OS X applications at the same time it may become awkward to remember which keypresses to use, so CrossOver attempts to support the use of Command-X, Command-C and Command-V in Windows applications as well.

For example, when this option is turned on CrossOver will pass a Ctrl-V keypress to the active Windows application anytime a user presses Command-V or clicks on the Edit → Paste menu. In most cases this will result in a paste action in the Windows program. If the application uses Command-V for a different purpose, or does not support cutting and pasting, the resulting behavior may be unpredictable.

Default value: on

7.4 Updates Preferences



Check for CrossOver Updates When this option is selected CrossOver will periodically check to see whether a new version of CrossOver is available. If a new version is detected, CrossOver will display a window outlining any changes or improvements the newer version will bring.

When a new version is detected, CrossOver will give you the option to install the new version or to keep your current one.

Default value: off

Log and report usage statistics CrossOver has the ability to record a list of which applications you run and periodically upload this anonymous list to CodeWeavers. This data is then used to better target improvements to future versions of CrossOver.

This logging and reporting is entirely optional and may be disabled at any time. Check the Log and report usage statistics check box to enable logging, or uncheck to disable.

Default value: off

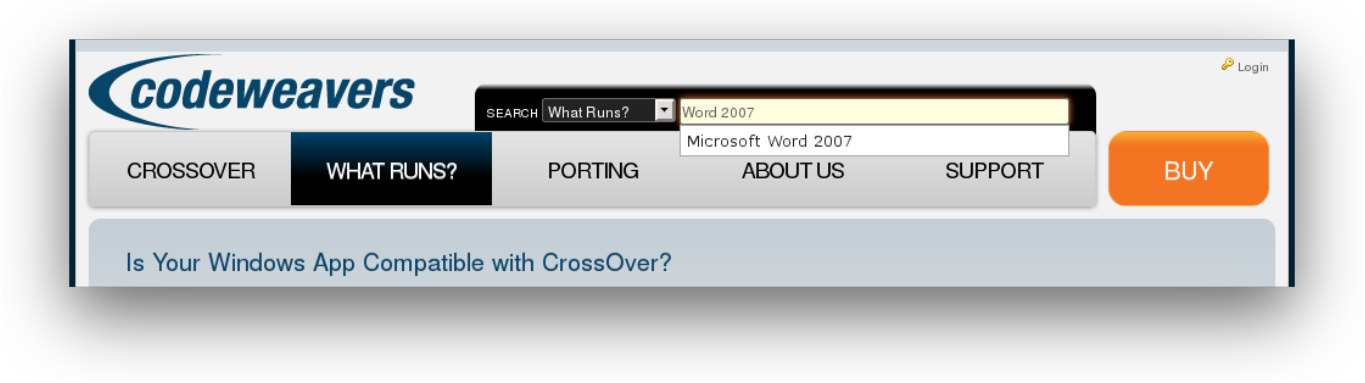
Chapter 8

Finding more information about running your Windows application with CrossOver

The CodeWeavers website has a database, the Compatibility Center, with information on how to run thousands of Windows applications in CrossOver. You can search for your application from the CodeWeavers home page, as pictured below.

First, visit CodeWeavers at www.codeweavers.com in your favorite web browser. Look for the search section labeled 'What Runs?' at the top of the CodeWeavers home page.

Enter the name of your application in the search section and press 'enter.' Below is an example of a search for Word 2007.

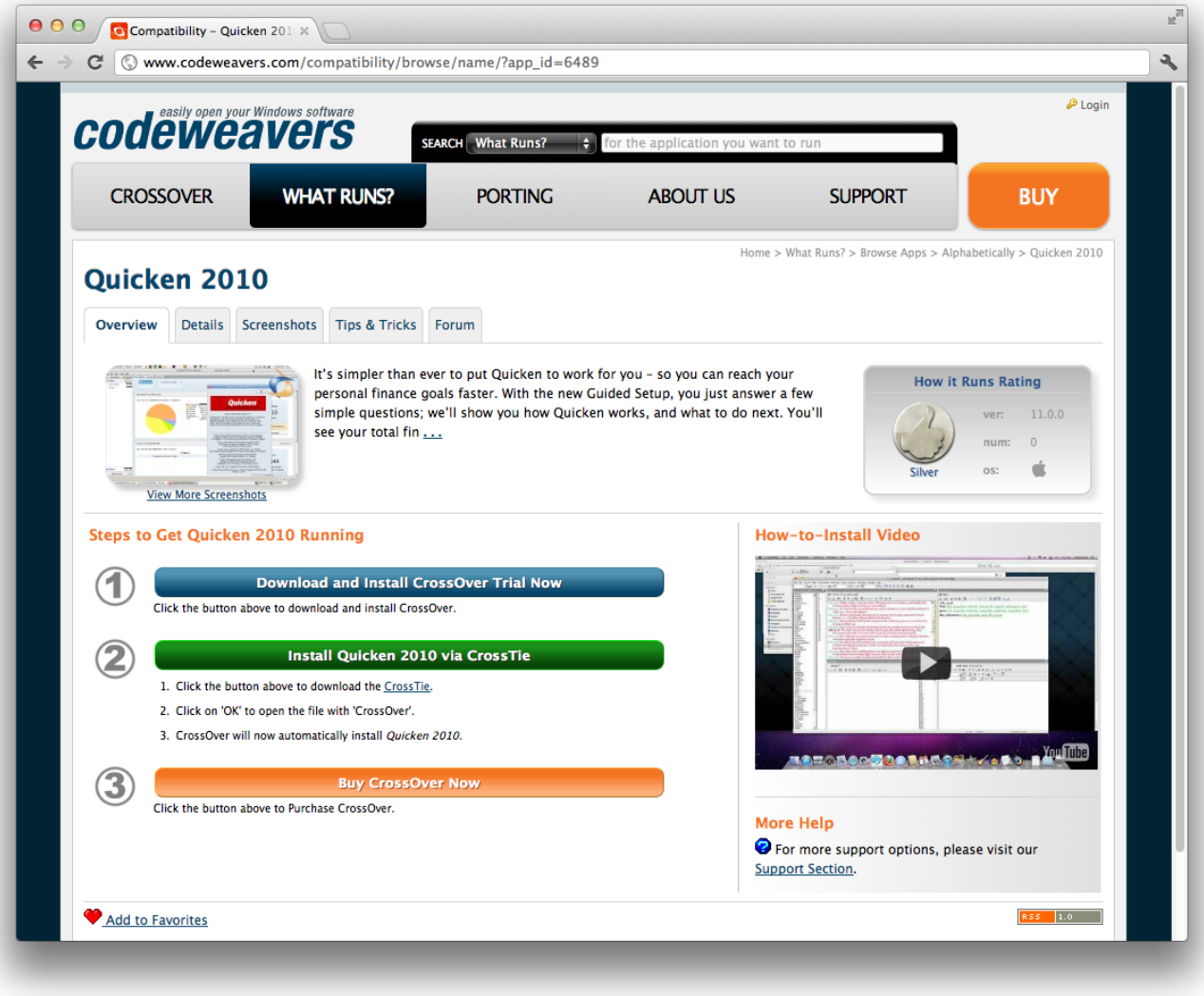


On the application's page you will find useful information, such as: the community's estimate of how well it will work in CrossOver; a forum dedicated to your application; and 'Tips and Tricks' for using your application with CrossOver.

If the application page has a green button labeled 'Install [your application name] via CrossTie', then a simple click on that button will let you install it on your computer.

Tip

If you have the CrossOver Software Installer set to automatically download new profiles, then these applications 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.



In most cases, a single click will launch the CrossOver Software Installer. With some browsers you may need to download the CrossTie file (it will have a .tie extension) and double-click to open it.

8.1 Using CrossTies with multiple CodeWeavers products

Starting with CrossOver XI, CrossOver will run both games and office applications like Microsoft Word. We recommend that you use the most modern version of CrossOver available to run all of your Windows software.

However if you own an older copy of CrossOver Games you may continue to use it alongside CrossOver XI and later if you wish to do so. If you have both CrossOver and CrossOver Games installed on your computer, you can chose which product to use when you install an application using a CrossTie file downloaded from the CodeWeavers website.

If CrossOver detects that you have more than one version of CrossOver installed which can handle a given CrossTie file, it will prompt you to make a choice about which version to use. The window below is an example of what you might see if you have attempt to install software via a CrossTie when you have two versions of CrossOver installed. Simply select the version of CrossOver you want from the drop-down menu and click Install. CrossOver will then install your software with the version you have selected.

Select your preferred version, and you'll be off and running.

Chapter 9

Advanced Manual Configuration Options

Most users will not need to use the instructions in this chapter. You should not attempt any of these procedures unless you have passing knowledge of the OS X command-line -- most of these sections require text commands to be issued.

9.1 Installing CrossOver on multiple systems

CrossOver supports rolling out Windows applications to a large number of users and on a large number of systems. The basic technique is bottle publication which allows all the users of a single system to share a single installation of each application. Bottle publication is simple -- just create a bottle with the included files and applications that you wish to distribute, remove any private data (for example, cached passwords and user names), and click the Publish button. After publication, all users on that system will have access to the software within the published bottle.

When a user accesses a published bottle, a 'stub bottle' will be created in their home account. Stub bottles contain a user's custom alterations to the bottle, and contain symbolic links that refer to most large files and directories in the published bottle. A stub bottle has the same name as the published bottle to which it refers.

9.1.1 Distributing a published bottle

The simplest way to distribute a published bottle to another Mac is to copy it into the same location on the new system (it's typically located in `/Library/Application Support/CrossOver/Bottles`). Users on that system only need to run CrossOver once after the bottle has been added, at which point CrossOver will create any icons that are a part of that bottle.

Depending on your needs and network configuration, you may wish to provide some or all of the following customizations before pushing packages out to the target machines.

Distributing ready-made icons If you have a facility to automatically push icons onto users' docks, you may wish to include one or more icons created by CrossOver in your distribution package. An icon will still work if copied from one machine to another, as long as the bottle path is the same on both. As soon as CrossOver is launched via the icon, it will review the icon file and may replace it with an equivalent system-local icon if appropriate.

Note
After publishing a bottle, you will have two sets of icons, one of which refers to your private bottle, and one of which refers to the published bottle. Make sure you distribute the icons that refers to the published bottle.

Providing custom or ready-made preference files Many sysadmins will want to modify some of CrossOver's default behavior before rolling it out widely. This can be done either by running scripted commands in each user account, or by preparing a ready-made defaults file (Typically `~/Library/Preferences/com.codeweavers.CrossOver.plist`) and copying that file into the `Preferences` directory of each user account.

A few of the most useful default settings are:

- **Changing where a user's bottles are located** The default user bottle directory is `~/Library/Application Support/CrossOver/Bottles`. Even when using published bottles this directory is used to store user-local settings. The location of this directory can be changed via the BottleDir preference:

```
$ defaults write com.codeweavers.CrossOver BottleDir /path/to/user_private/non_networked/ ↩
    bottle/dir
```

  It is very important that you not point this setting to a directory that contains the published bottles themselves, as user settings will conflict with the system settings.

  Using a networked or remote volume for the bottle directory may result in serious performance problems and is generally a bad idea.

- **Changing where CrossOver looks for published bottles** If you want to store the published bottles on an external volume, or on one that's shared between multiple systems, you will probably need to redirect CrossOver to look in an alternative directory. This can be accomplished using the ManagedBottleDirs preference:

```
$ defaults write com.codeweavers.CrossOver ManagedBottleDirs /path/to/shared/non_networked ↩
    /bottle/dir
```

9.2 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` available as the drive `J:` in a bottle, you would execute the following command:

```
$ ln -s /mnt "~/Library/Application Support/CrossOver/Bottles/bottle-name/dosdevices/j:"
```

To associate this drive to the `/dev/sda1` device you would add a double colon to the command.

```
$ ln -s /dev/sda1 "~/Library/Application Support/CrossOver/Bottles/bottle-name/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/.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/.windows-label
```

9.3 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 published 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. Thus they are ideal 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 `~/Library/Application Support/CrossOver/scripts.d` directory.
- Finally, each bottle can have its own set of hooks. These are especially suited to configure a published bottle for use by each non-root user. This is also the only kind of hook which is automatically packaged with the bottle when it is archived, and is 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 and 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 *`published-wineprefix`*

  This case happens when a published 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 *`published-wineprefix`* points to root's reference copy in `/Library/Application Support/CrossOver/Bottles`.

- When a bottle stub is updated

  `hook` update-stub *`published-wineprefix`*

  This case happens when the administrator has updated the published bottle's reference copy in *`published-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 they don't need to use the `--bottle` option and 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
```

Chapter 10

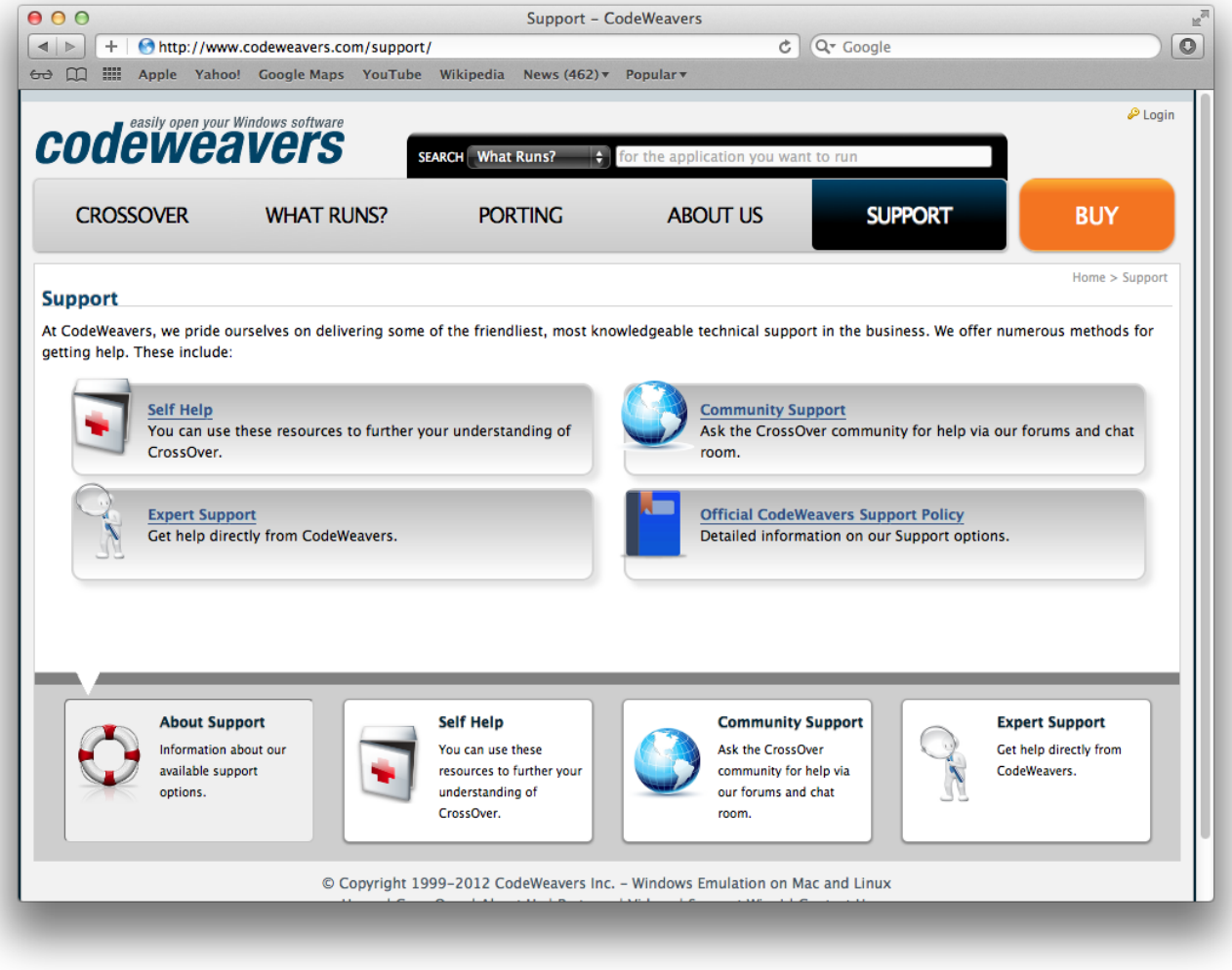
Troubleshooting

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 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.

Appendix A

Glossary

A.1 Bottles

Important
CrossOver 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 (Microsoft Office, for example) at the same time.

A.2 Published Bottles

A published bottle is a bottle that is available for use by all users on a system. These bottles are stored in the `/Library/Application Support/CrossOver/Bottles` folder and can be copied or deleted but not modified. A private bottle, by contrast, is a bottle which is stored in a single user's home and can be accessed only by that user.

Any user may run the applications in a published bottle. All files that are created or changed during use are stored in that user's home folder and do not affect other users on the system.

For example, if a user wants to install Internet Explorer and then provide it for use by other family members, he or she would install Internet Explorer into a private bottle, and then publish that bottle. Subsequently, other users can run CrossOver and launch Internet Explorer without engaging the bottle manager or installing anything.

Once a bottle has been published, it cannot be modified. In order to modify a published bottle it is necessary to make a private copy, modify it, and re-publish. Any copy of a published bottle is automatically made private.

A.3 CrossOver Software Installer

The CrossOver Software Installer is an assistant that will guide you through the process of installing Windows software. See the Installing Windows Software section of this guide for more details.

A.4 CrossTie

CrossTie profiles are small files that contain instructions that tell the CrossOver Software Installer how to install and configure a given Windows application so it works best with CrossOver. You can find out more about CrossTies and how to acquire them in the Compatibility Center section of this guide.