

Converting a Parallels Virtual Machine to Run in VMware Fusion

VMware Fusion 1.0

This technical note describes the process for moving a virtual machine from Parallels Desktop for Mac to the current VMware Fusion 1.0. The technique uses VMware Converter 3.0.1, which is a free download.

This procedure works with virtual machines created under Parallels Desktop 2.5 (build 3118) and under Parallels Desktop 3.0 (build 4128).

Limitations of this technique include:

- Like VMware Converter, the procedure works with Windows XP, Windows 2003, Windows 2000, or Windows NT4 virtual machines only. It does not work with Linux virtual machines, and it also does not work with Microsoft Vista virtual machines.
- Your virtual machine must contain an NTFS file system with at least 300MB of free space.
- If your copy of Windows was not licensed with a volume-license key, you might need to reactivate it when it is booted up inside VMware Fusion.
- Downloading VMware Converter, although free, requires answering a small number of marketing questions.

The procedure consists of the following stages:

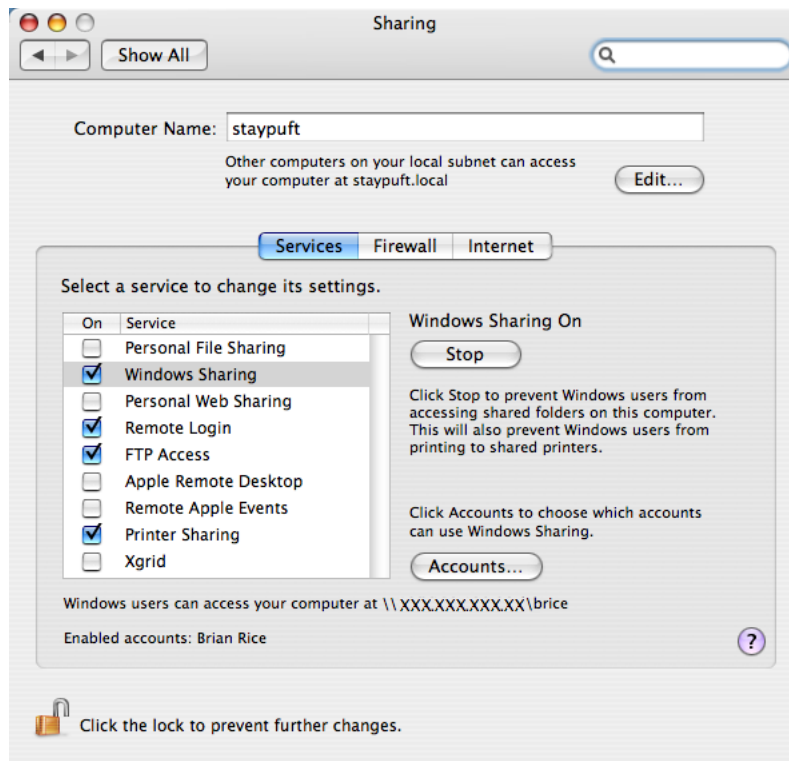
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1 Setting Up File Sharing and Launching Your Source Virtual Machine

This technique requires some type of file sharing between your virtual machine and the host Macintosh. You may use either a network share—the method adopted in this note—or Parallels Shared Folders. Using a network share might be faster. Your performance might vary.

To set up file sharing

- 1 Make sure that your Mac home directory has a `Virtual Machines` subdirectory. Create one now if none is present.
- 2 To use a network share, you must enable Windows Sharing on your host Mac.
 - a Click on System Preferences in the Dock and choose the Sharing tool.
 - b Enable Windows sharing, and ensure that your Mac login is shared.



Notice the text near the bottom of the Sharing window:

Windows users can access your computer at `\\<XXX.XXX.XXX.XX>\brice`

This sentence shows your home directory's *network path*, also known as a "UNC path" or a "whack-whack path." You use this network path later to allow VMware Converter to write virtual machine files into your Mac home directory.

To launch your source Parallels virtual machine

- 1 Log on to your source Parallels virtual machine as Administrator or as a user with administrative privilege.
- 2 If you plan to use Windows file sharing, confirm that your virtual machine can mount a Windows file share from the host Mac.

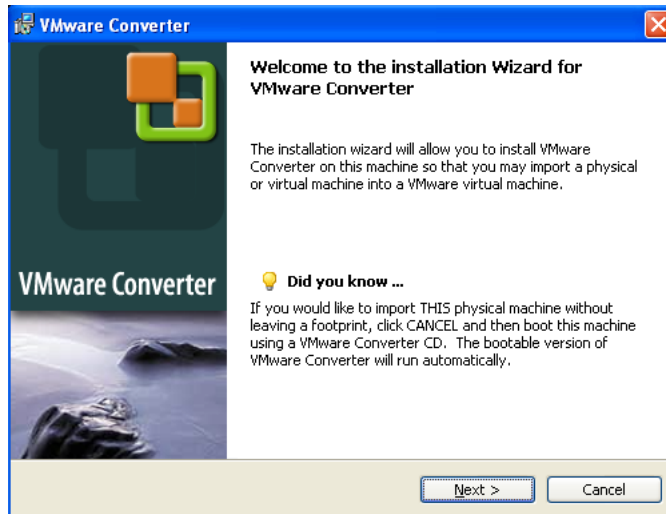
Otherwise, confirm that Parallels shared folders gives you access to your home directory.

2 Installing and Launching VMware Converter

Next, download and install VMware Converter into your Parallels virtual machine.

To install and launch VMware Converter

- 1 Download Converter from <http://www.vmware.com/download/converter/> and run the installer.

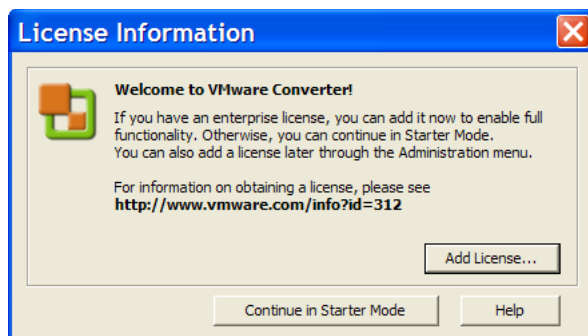


Disregard the text under the light bulb. Use of Converter in the mode it describes requires buying an enterprise Converter license, which is not necessary for this purpose.

- 2 Click **Next**.
- 3 Accept the license agreement, and do a typical (default) installation.

When you run VMware Converter for the first time, it asks you to type in a license code. You don't need a license for this procedure.

- 4 Click **Continue in Starter Mode**.



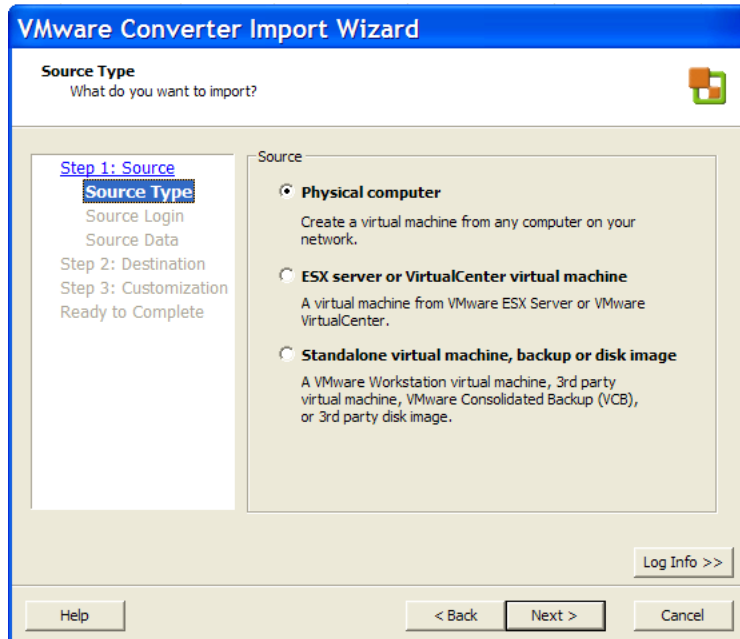
The Task Manager window appears. It consists of a toolbar, a Task View in the upper part of the window, and a Details View in the lower part. You launch the Converter Import Wizard from here.

3 Selecting Your Source Machine

The first part of the conversion requires you to select your source machine, in this case the Parallels virtual machine in which you are running Converter.

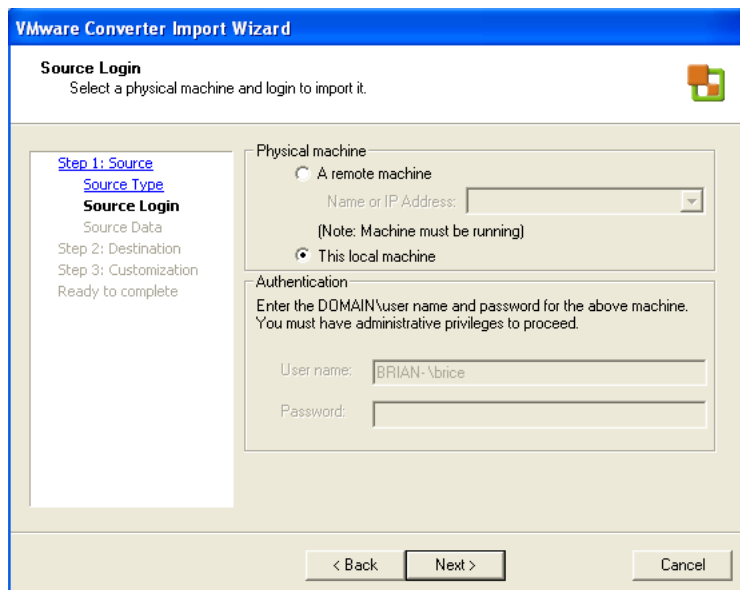
To select your source machine

- 1 Click **Import Machine** in the upper-left part of the toolbar to launch the Import Wizard.
- 2 On the Source Type page, select **Physical computer**, even though you plan to import a virtual machine (the present one).



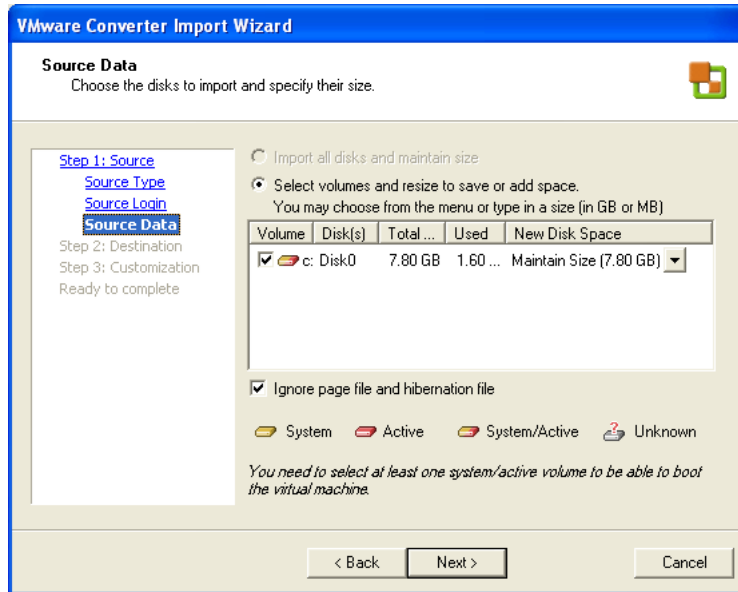
- 3 On the Source Login page, select **This local machine** and click **Next**.

When you select **This local machine**, the **Authentication** boxes is dimmed. Converter assumes that you are running with administrative privilege.



- 4 On the Source Data page choose the disks to import and click **Next**.

The example Parallels virtual machine has only one disk, its C: drive.

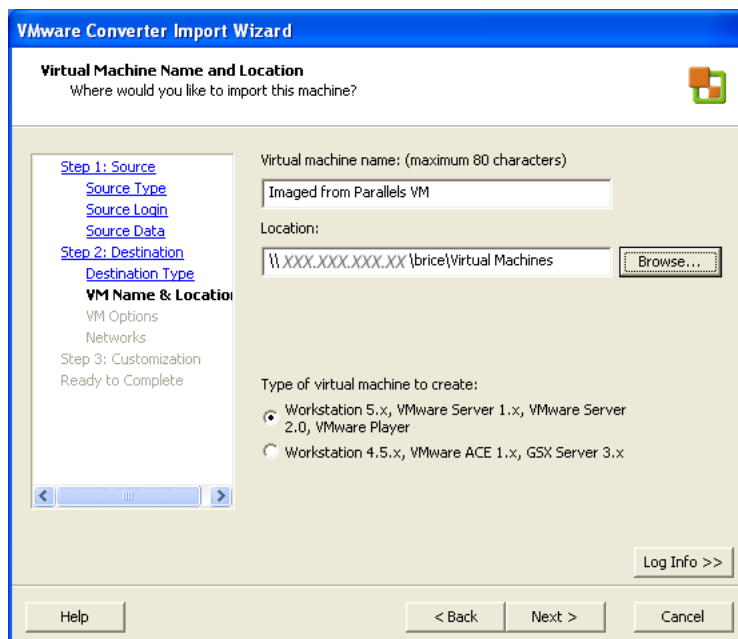


4 Importing Your Source Machine as a VMware Fusion Virtual Machine

The next part of the process is to indicate to Converter what kind of virtual machine you want.

To set up the import for a VMware virtual machine as destination

- 1 In the Destination Type page, select **VMware standalone virtual machine** and click **Next**.
- 2 In the Virtual Machine Name and Location page, enter a name for your new virtual machine, and the location to write the VMware virtual machine it will create from your Parallels virtual machine.



- 3 Choose a temporary name for the virtual machine.

This example uses **Imaged from Parallels VM**. You can define a new name later that reflects the purpose of the virtual machine.

- 4 If you enabled Windows file sharing on your Mac, put in a network path that points at the Virtual Machines subdirectory of your Mac home directory, as shared by the Mac.

Recall the network path you wrote down from the Mac OS Windows Sharing tool. Append **Virtual Machines** to it, such as `\\<XXX.XXX.XXX.XX>\brice\Virtual Machines`. That is where you are going to write the new virtual machine on the host.

If you plan to use Parallels Shared Folders instead, enter a path such as `\\.\psf\<sharename>\Virtual Machines`, where *sharename* is the name of your shared folder that points to your Mac home directory.

Converter makes a subdirectory in the UNC path you name with the same name as the virtual machine, and puts its `.vmx` file and its virtual disk in there.

- 5 Pick Workstation 5 as the destination virtual machine type and click **Next**.

If you are using a network share, you see a pop-up menu to supply your Mac logon credentials.

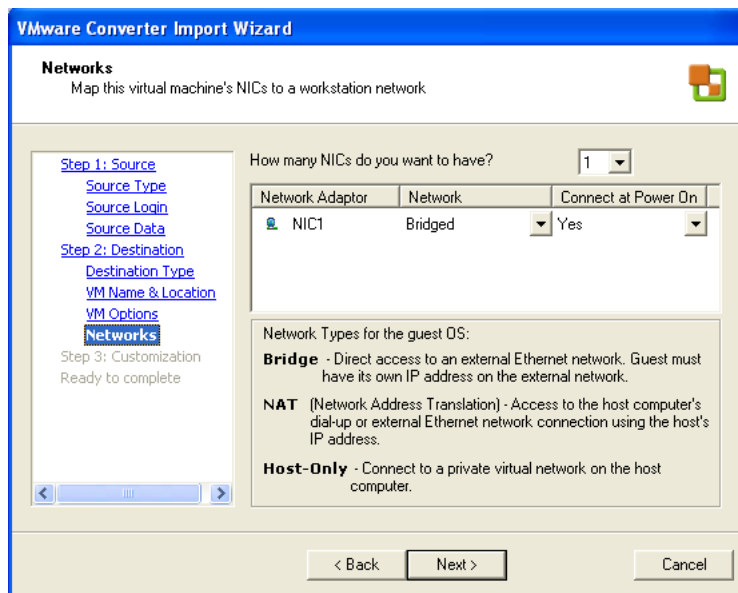
- 6 On the VM Options page, select the kind of virtual disks to make for this virtual machine: **Allow virtual disk files to grow** or **Allocate all disk space now for better performance**.

Most users would not notice the performance difference of preallocated disks, but you might if you plan to do something especially disk-I/O-intensive in this virtual machine. Ordinarily, **Allow virtual disk files to grow** is a good choice.

NOTE You cannot deselect the **Split disk into 2 GB files** check box, but it is a good choice. Dividing disks into 2GB chunks means that they can be safely stored in a FAT file system, such as many Mac users have on their external hard disks.

- 7 Click **Next**.

- 8 On the Networks page, confirm the network configuration for the new virtual machine and click **Next**.



The Customization page asks if you want to customize the guest operating system of the virtual machine. You do not need to customize, because you are only migrating this virtual machine from Parallels to Fusion, and you don't plan to run the source and the destination at the same time. This requires the purchase of an additional Windows license unless you have a volume licensing agreement.

- 9 Click **Next** to move to the Ready to Complete page.

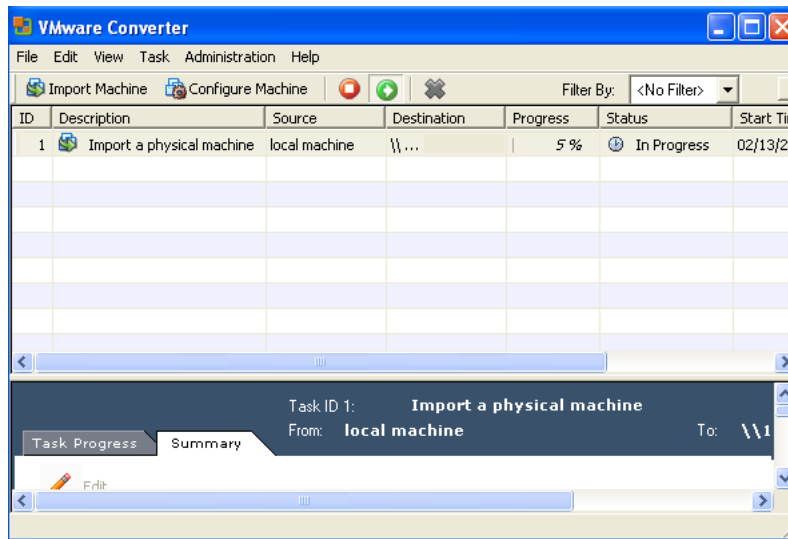
You do not have the option to install VMware Tools in the new virtual machine at this point. Later, after the conversion, you install the VMware Fusion version of VMware Tools.

5 Completing the Converter Import Task Creation

On the final page of the wizard, Converter summarizes what it is about to do. If you are satisfied, you tell Converter to complete the import, wait for it to execute the task, and then shut down Parallels in preparation for the next stage of the process.

To complete the import task and exit Parallels

- 1 On the Ready to Complete page, click **Finish** to close the wizard and display the Task View with the conversion job in the task list.



- 2 When the task finishes, exit Converter, shut down your Parallels virtual machine, and exit Parallels Desktop.

NOTE If you do not shut down your Parallels virtual machine before starting up the Fusion virtual machine cloned from it, you will be in violation of your Microsoft license agreement unless you have a volume license. Also, depending on your virtual machines' network configuration, you might get a "duplicate computer name" or even a "duplicate IP address" warning.

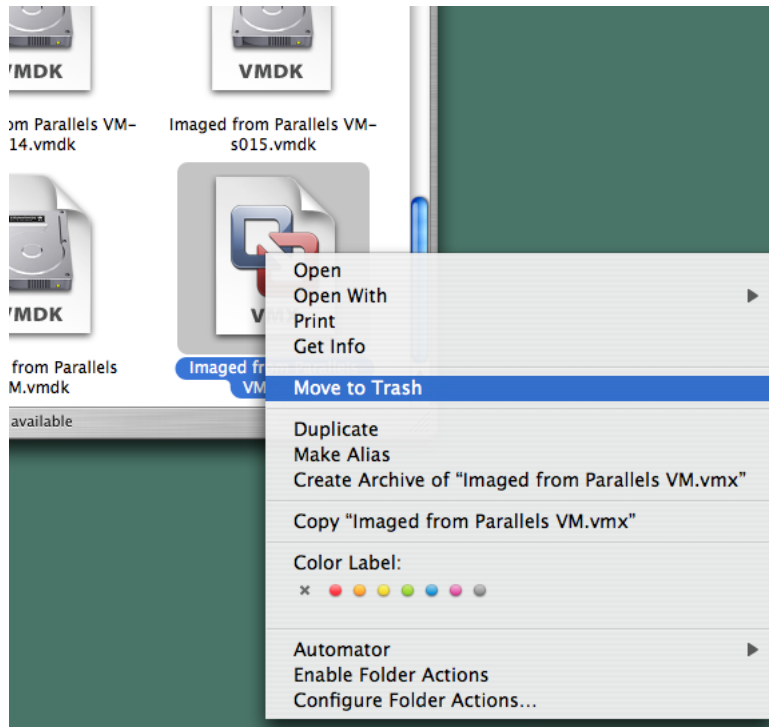
6 Creating the VMware Fusion Virtual Machine

The next stage of the process is to create a new virtual machine in VMware Fusion, using the virtual disk(s) imported by Converter.

At the destination you specified on the host, there is a new directory (in our example, one called **Imaged from Parallels VM**) containing several **.vmdk** files and a **.vmx** file. VMware virtual machines' **.vmx** files are text files that govern how they are built. You will discard the **.vmx** file created by Converter and replace it with one created by Fusion. However, you will retain the virtual disk (the **.vmdk** files).

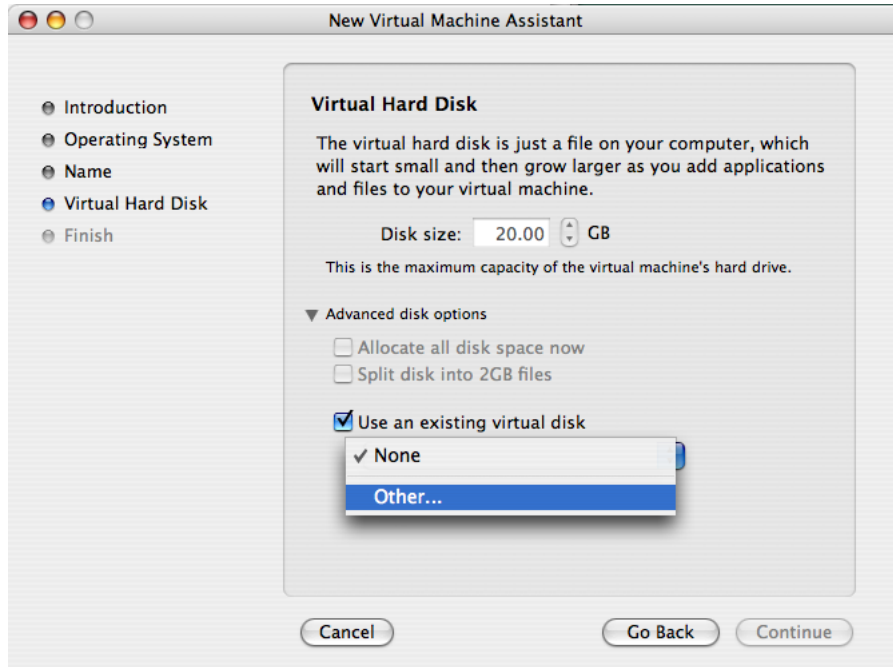
To prepare the disk files and create the new virtual machine

- 1 Use Finder to open the subdirectory of your **Virtual Machines** directory where the new virtual machine was just written.
- 2 Delete the **.vmx** file, but leave all other files intact.

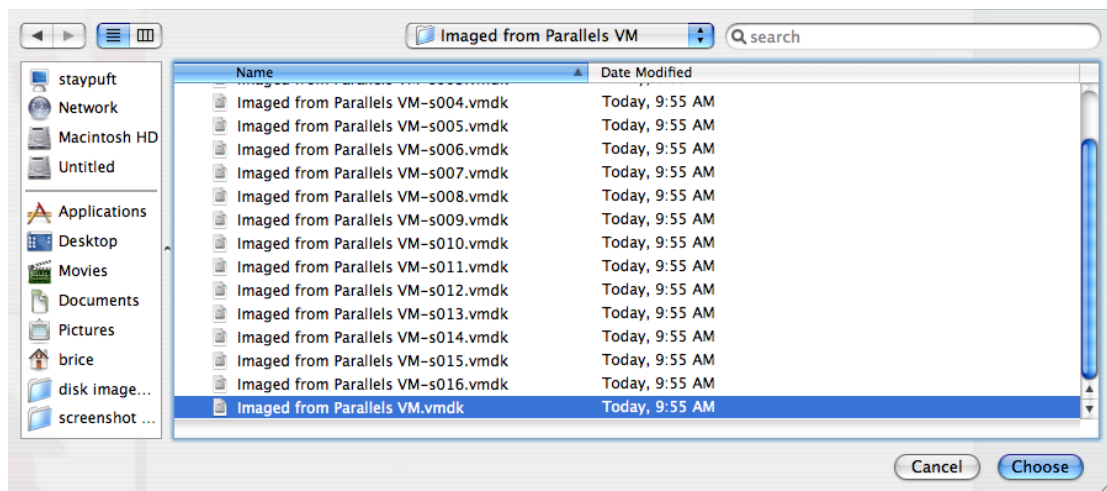


- 3 Launch VMware Fusion.
- 4 From the Virtual Machine Library window, click the **New** button, and click **Continue** to go from the Introduction panel to the Operating System panel.
- 5 Indicate which operating system you “will install” in your virtual machine.
You have already installed an operating system in your virtual machine, however, so tell the wizard which one that was.
- 6 Click **Continue**.
- 7 On the Name and Location panel, enter the name and location of your virtual machine.
Choose a descriptive name for your virtual machine. This name must be different from the temporary name you gave it during the Converter import.
- 8 Click **Continue**.
The Virtual Hard Disk panel is where, ordinarily, you would create a new virtual disk.
- 9 You want instead to use the virtual disk that Converter built for you, so click the gray triangle next to **Advanced disk options**, and select the check box for **Use an existing virtual disk**.

- In the drop-down menu below, select **Other**.



- In the file-selection dialog box that appears, navigate into the virtual-machine directory that Converter made for you—the one from which you deleted the **.vmx** file.
- Point Fusion to the **.vmdk** file with the shortest name and click **Choose**.



- On the Finish screen, deselect the **Start virtual machine now** check box and click **Finish**.

VMware Fusion creates the new virtual machine for you, with a **.vmx** file that points at the virtual disk Converter made. This new **.vmx** file will not be in the same directory as the virtual disk it points to, but this oddity will cause no problems. If you need to make a backup up of this virtual machine, back up both directories.

- In the Settings pane for this virtual machine, click **OK**.

The virtual machine window appears. You are ready for the next step, powering on the new virtual machine.

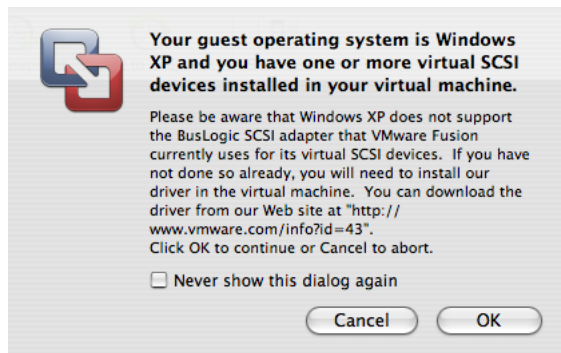
7 Powering On the New Virtual Machine for the First Time

When you power on the virtual machine for the first time in VMware Fusion, you need to make a number of adjustments.

To power on the new virtual machine

- 1 In the virtual machine window, power on the virtual machine by using the big gray button.
- 2 If you get a message warning you about the presence of SCSI virtual disks in this virtual machine, select the check box for **Never show this dialog again** and click **OK**.

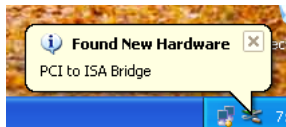
The condition is harmless.



Allow the virtual machine to boot up.

- 3 Unless your virtual machine does so automatically, log on as a user with administrative privilege.

There will be a long series of messages about newly detected hardware. Let the process complete before proceeding.



Mouse movements in the virtual machine are now somewhat slow, and mouse focus gets stuck inside the virtual machine when you click in it. Shortly, you will install VMware Tools, which will relieve both these issues. In the meantime, press **ctrl-⌘** to get your input focus out of the virtual machine, and click inside the virtual machine's window to put input focus back in.

- 4 Anytime you see a screen asking you to search for drivers, click **Cancel**.



If Windows asks you to reactivate, decline the opportunity to do so for now. It will be much easier to reactivate when VMware Tools has been installed.

- 5 In the Systems Settings Change dialog box, click **Yes** to reboot.



- 6 After the reboot, log on again as a user with administrative privilege, if necessary.

8 Installing VMware Tools

It is now time to install VMware Tools, which, among other benefits, will supply an accelerated mouse driver.

To install VMware Tools

- 1 Press **ctrl**–**⌘** to get your mouse focus out of the virtual machine.
- 2 From the Fusion **Virtual Machine** menu, choose **Install VMware Tools**.
The VMware Tools installer launches inside the virtual machine.
VMware Tools installs a number of device drivers.
- 3 If Windows asks you if you want to install an unsigned driver, click on **Continue Anyway** or press **C**.
- 4 Install all the parts of VMware Tools, even those you might not need right now.
The VMware Tools installer asks to reboot your virtual machine.
- 5 Click **Yes**.

Your virtual machine is ready for use. You now have convenient mouse operation, the ability to operate in full-screen mode, access to virtual-machine files and applications, the use of Unity, and the use of high-speed USB 2.0 devices. If you install the Boot Camp drivers in your guest operating system, as outlined in the Fusion documentation, you can use the iSight camera and other Mac-specific devices.



CAUTION You may be tempted to remove Parallels Tools. At least for Windows XP, it is not worth the effort. The Parallels uninstaller will not work unless it is running inside a Parallels virtual machine, so you cannot uninstall Parallels Tools after the migration to Fusion. On the other hand, if you uninstall Parallels Tools from the virtual machine while it is running under Parallels, you will find it extremely difficult to run any application, including VMware Converter. VMware recommends removing the Parallels desktop shortcuts after the migration is complete.

9 Changing the Virtual Machine So It Shuts Down Cleanly

When you shut down this new virtual machine, it does not power off all the way. Instead, you see a screen like this one:



This is because the Parallels virtual machines, unlike those of VMware, do not support the ACPI standard for power management.

To power off the virtual machine, choose the **Power Off** menu item in the VMware Fusion **Virtual Machine** menu.

There are two ways to allow the virtual machine to shut down completely.

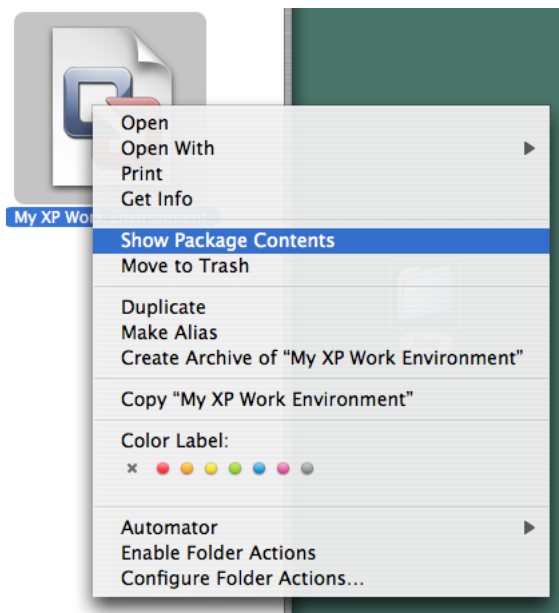
Method 1 Shutdown

If you do not plan to equip this virtual machine in the future with two virtual CPUs (instead of the default one), you can add a statement to this virtual machine's **.vmx** file *while the virtual machine's virtual power is off* with a text editor such as BBEdit or textwrangler.



CAUTION Avoid using TextEdit on **.vmx** files, because it can inject formatting errors if you cut and paste in the wrong way. See the Fusion release notes for more detail on this topic.

To navigate to the **.vmx** file using Finder, you need to open the package that contains it. If you called your virtual machine **My XP Work Environment**, there is an entry in your Virtual Machines directory with that name. **Ctrl-click** on it and choose **Show Package Contents**.



Inside the package, find the `.vmx` file. Ctrl-click on it and open it with your preferred text editor.

In the **Choose Application** dialog box, you will need to change the list of applications from **Recommended Applications** to **All Applications**, so that your preferred text editor will be offered to you.

Using the text editor, add this line:

```
gui.exitonCLIHLT = "TRUE"
```

Now your virtual machine will shut down cleanly.

Method 2 Shutdown

The other way to get the virtual machine to shut down cleanly is to change its HAL to an ACPI HAL. Microsoft does not support changing Windows XP HALs from non-ACPI to ACPI except by reinstalling Windows.

You are not required to do a clean install. Rather, reinstall XP on top of an existing installation. To choose a new HAL explicitly, you may need to press F5 during the non-GUI portion of the reinstall, when the Windows installer is prompting you to press F6 for new drivers. Windows XP shows you a scrollable list of HALs to choose among. The scrolling window is only two lines high, so you must use the arrow keys to explore the whole list. Choose ACPI Uniprocessor HAL if you want this virtual machine to run with one virtual CPU, or choose ACPI Multiprocessor HAL if you want to run two. (To get multi-CPU operation, you must also edit the settings of this virtual machine in VMware Fusion, setting the number of CPUs to two.)