

Installing Your Own Guest OS in Virtual PC 6

This document provides installation guides for the following OSes.

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The following procedures require a full version of Windows XP, 2000, or Windows 98. The versions of Windows included with Virtual PC cannot be installed using the methods described here. Please see your Virtual PC User's Guide for information on installing the Windows included with Virtual PC.

Connectix provides limited support for Linux. Currently, there are no Additions for Linux which limits the functionality and performance of any version of Linux under Virtual PC. If you need additional support for Linux beyond installation, please contact the publisher for technical support.

Installing Windows XP Professional

Installation Notes:



Virtual PC Toolbar: Located in the lower left corner of the guest's window, the VPC Toolbar items provide information about the status of your guest PC, from left to right: Hard Drive, CD/DVD-ROM, Floppy

Disk, Shared Folders, Network, USB, Printing Info, and Additions Installer/PC Info. The tool bar also provides a number of convenient features that are accessed by contextual menus (click the icon) or by dragging items onto the tool bar icons. A CD-ROM ISO image or floppy disk image can easily be mounted in the guest by dragging the disk image and dropping it on the respective VPC tool bar icon. See the Virtual PC help for more information. To release a CD-ROM or Floppy disk image click the appropriate icon and select **Release *diskname***.

When prompted to press enter, you may also press return on the Mac keyboard.

If you receive the message, "The Virtual PC Additions are not installed in the PC", click **Don't show this message again** and click **Cancel**. The VPC Additions can only be installed after Windows is completely installed.

There may be some minor discrepancies in the steps when installing your copy of Windows, as not all versions will have all the steps listed and some may have additional steps not listed.

Creating a new guest PC:

1. Launch Virtual PC
2. From the Virtual PC List, click **New**. If the Virtual PC list does not show up, press **command+L** or click **Window, Virtual PC List**.
3. **Select a Setup Method:** Select **Create a PC Manually** and click the right arrow.
4. **Select a Hard Drive Data Source:** Select **Install an operating system onto an empty PC** and click the right arrow.
5. **Select an Operating System:** Select **Windows XP** and click the right arrow.
6. **Select a Memory Setting:** Adjust the memory to 256MB of RAM and click the right arrow.
7. **Undo Drives:** Do not select Undo Drives for the installation. Undo drives can be enabled after the installation. Click the right arrow.
8. **Select a PC Name:** The default name will be Windows XP, change the description if desired. Click the right arrow.
9. **Conclusion:** Click **Create** to finish the guest creation.

Installing Windows XP Professional

10. Insert the Windows XP Professional CD-ROM, wait until the CD-ROM is mounted on the Mac desktop.
11. **Virtual PC List:** Click **Start Up**.
12. After clicking **Start Up**, a black screen will appear. A prompt will appear, **Press any key to boot from CD...** Press **return** to begin the installation. Wait while Setup loads the necessary files.
13. **Welcome to Setup:** Press **Enter** to set up Windows XP.
14. **Windows XP Licensing Agreement:** Read the license agreement, press **F8** to accept the license and continue the installation.
15. The default drive image created by the New PC Assistant for Windows XP guests is a 16GB FAT32 partition. To accept the default size and format, press **Enter** to continue.

NOTE The next step will allow the partition to be formatted in NTFS.

16. Press **Enter** to leave the current file system intact, or use the arrow keys to select an alternate option: **Format the partition using NTFS file system (Quick)**, **Format the partition using the FAT file system (Quick)**, **Format the partition using NTFS file system**, **Format the partition using the FAT file system**, or **Convert the partition to NTFS**. Connectix recommends FAT32 for best compatibility with Virtual PC.
17. **Regional and Language Settings:** Click **Next** to accept the default settings and continue.
 - a. Click **Customize** to change the regional and language settings.
 - b. Click **Details** to change the text input language and method.
18. **Personalize Your Software:** enter a name and optionally an organization. Click **Next** to continue.
19. **Your Product Key:** Enter the 25-character Product key from the Windows XP Certificate of Authenticity. Click **Next** to continue.
20. **Computer Name and Administrator Password:** Setup will suggest a computer name, or enter a custom name. Enter an Administrator password and confirm it. Click **Next** to continue.
21. **Date and Time Settings:** Verify the correct date and time are displayed, click **Next** to continue.
22. **Network Settings:** Select **Typical Settings** and click **Next** to continue.
23. **Workgroup or Computer Domain:** Select whether this Windows XP installation will be part of a domain or workgroup. If you are unsure or are not part of a business network, click **Next** to continue.

NOTE It is also possible to join the Windows XP guest to a domain after the installation has completed. To join a domain, a user account with permissions to add a computer account to the domain is necessary.

24. **Display Settings:** click **Ok** to continue.
25. **Monitor Settings:** click **Ok** if the text box is readable.
26. **Welcome to Microsoft Windows:** click **Next** to continue.
27. **Checking Internet connectivity:** if there is no Internet connection, click **Skip**.
28. **How will this computer connect to the Internet:** select the type of connection you have and click **Next**, or click **Skip** to cancel.
 - a. To share the Mac's Internet connection, select **Local area network (LAN)** and click **Next**.

- b. **Setting up a high speed connection:** Select **Obtain IP automatically** and **Obtain DNS automatically** and click **Next**.
- 29. **Ready to Activate Windows:** Select **Yes** or **No** and click **Next**.
- 30. **Register with Microsoft:** select whether or not to register with Microsoft and click **Next**.
- 31. **Who will use this computer:** Enter at least one name and click **Next**.
- 32. Click **Finish** to complete setup.

Installing the VPC Additions in Windows XP Professional

The VPC Additions provide the following:

- Mouse Integration: Allows the mouse to move freely between Windows and Mac desktops.
- Shared Folders: Allows you to access folders and files on the Mac
- Performance enhancements: Adds optimized video drivers to increase the performance of Windows.
- Drag and Drop: Allows you to copy files from the Windows desktop to the Mac desktop and vice-versa.
- Time synchronization: Synchronizes the time in Windows to match the Mac's time.
- Dock Application support: Allows you to dock Windows applications in the OS X's dock.

You must be logged in with administrator privileges to install the VPC Additions. If you are logged in with the account created during installation, you have Administrator privileges.

1. Log onto Windows. You must be at the desktop, where you can see the icons like My Computer.
2. Press the Command key and move the mouse outside of Windows to release the mouse.
3. Click the 'Puzzle Piece' icon on the VPC Toolbar. The Puzzle Piece is the right-most icon in the VPC Toolbar. When you click the Puzzle Piece, a pop-up menu will appear, click **Install Additions**.
4. This will launch the Virtual PC Additions setup.
5. **Virtual PC Additions Setup:** Select **I agree to the terms of this license agreement**. Click **Next** to continue.
6. **Information:** Click **Next** to continue.
7. **Ready to Install:** Click **Next** to continue.
8. **Restart the Guest OS:** Click **Finish**.

Windows XP Speed Optimizations

To increase Windows speed, here are some tips.

Visual Effects

These optimizations minimize the changes to the XP visual effects.

- Turn off the mouse pointer shadow:
 - Click **Start**, then **Control Panel**.
 - **Control Panel:** Click **Switch to Classic View**.
 - **Control Panel:** Double-click **Mouse**.
 - **Mouse Properties:** Click the **Pointers** tab.
 - **Mouse Properties:** Deselect **Enable pointer shadow** and click **OK**.
- Disable transition effects for menus:
 - Click **Start**, then **Control Panel**.
 - **Control Panel:** Click **Switch to Classic View**, if not already in Classic View.
 - **Control Panel:** Double-click **Display**.
 - **Display Properties:** Click the **Appearance** tab, then click **Effects...**
 - **Effects:** Deselect **Use the following transition effect for menus and tooltips**, click **OK**.
 - **Display Properties:** Click **OK**.

Alternately, this will turn off all the XP visual effects of Windows XP, switching to the ‘classic’ Windows 2000 look. This will provide a greater increase in performance than the options above.

- Disable Visual Effects: This will disable the visual effects of Windows XP
 - Click **Start**, then **Control Panel**.
 - **Control Panel:** Click **Switch to Classic View**, if not already in Classic View.
 - **Control Panel:** Double-click **System**.
 - **System Properties:** Click the **Advanced** tab
 - **System Properties:** Click **Settings** under **Performance**.
 - **Performance Options:** Select **Adjust for best performance**

Windows Desktop

- Disable the Windows XP background
 - Click **Start**, then **Control Panel**.
 - **Control Panel:** Click **Switch to Classic View**, if not already in Classic View.
 - **Control Panel:** Double-click **Display**.
 - **Display Properties:** Click the **Desktop** tab. Select **None** from the **Background** list. Click **OK**.

Virtual Memory (Paging file)

- Set a fixed page file:
 - Click **Start**, then **Control Panel**.
 - **Control Panel:** Click **Switch to Classic View**, if not already in Classic View.
 - **Control Panel:** Double-click **System**.
 - **System Properties:** Click the **Advanced** tab
 - **System Properties:** Click **Settings** under **Performance**.
 - **Performance Options:** Click the **Advanced** tab.
 - **Performance Options:** Click **Change** under **Virtual Memory**.
 - **Virtual Memory:** Under **Custom size**, set the **Initial Size (MB)** and **Maximum Size (MB)** of the page file to 1 to 1.5 times the RAM assigned to Windows XP. Click **Set**, then click **OK**.
 - **System Control Panel Applet:** Click **Ok**. You may not receive this message
 - **Performance Options:** Click **OK**.
 - **System Properties:** Click **OK**.
 - **System Settings Change:** Click **Yes** or **No**, to restart the computer now.

Installing Windows XP Home

Installation Notes:



Virtual PC Toolbar: Located in the lower left corner of the guest's window, the VPC Toolbar items provide information about the status of your guest PC, from left to right: Hard Drive, CD/DVD-ROM, Floppy

Disk, Shared Folders, Network, USB, Printing Info, and Additions Installer/PC Info. The tool bar also provides a number of convenient features that are accessed by contextual menus (click the icon) or by dragging items onto the tool bar icons. A CD-ROM ISO image or floppy disk image can easily be mounted in the guest by dragging the disk image and dropping it on the respective VPC tool bar icon. See the Virtual PC help for more information. To release a CD-ROM or Floppy disk image click the appropriate icon and select **Release *diskname***.

When prompted to press enter, you may also press return on the Mac keyboard.

If you receive the message, "The Virtual PC Additions are not installed in the PC", click **Don't show this message again** and click **Cancel**. The VPC Additions can only be installed after Windows is completely installed.

Creating a new guest PC:

1. Launch Virtual PC
2. From the Virtual PC List, click **New**. If the Virtual PC list does not show up, press **command+L** or click **Window** then **Virtual PC List**.
3. **Select a Setup Method:** Select **Create a PC Manually** and click the right arrow.
4. **Select a Hard Drive Data Source:** Select **Install an operating system onto an empty PC** and click the right arrow.
5. **Select an Operating System:** Select **Windows XP** and click the right arrow.
6. **Select a Memory Setting:** Adjust the memory to 256MB of RAM and click the right arrow.
7. **Undo Drives:** Do not select Undo Drives for the installation. Undo drives can be enabled after the installation. Click the right arrow.
8. **Select a PC Name:** The default name will be Windows XP, change the description if desired. Click the right arrow.
9. **Conclusion:** Click Create to finish the guest creation.

Installing Windows XP Home

10. Insert the Windows XP Home CD-ROM, wait until the CD-ROM is mounted on the Mac desktop.
11. **Virtual PC List:** Click **Start Up**.
12. After clicking **Start Up**, a black screen will appear. A prompt will appear, **Press any key to boot from CD...** Press **return** to begin the installation. Wait while Setup loads the necessary files.
13. **Welcome to Setup:** Press **Enter** to set up Windows XP.
14. **Windows XP Licensing Agreement:** Read the license agreement, press **F8** to accept the license and continue the installation.

15. The default drive image created by the New PC wizard for Windows XP guests is a 16GB FAT32 partition. To accept the default size and format, press **Enter** to continue.

NOTE The next step will allow the partition to be formatted in NTFS.

16. Press **Enter** to leave the current file system intact, or use the arrow keys to select an alternate option: **Format the partition using NTFS file system (Quick)**, **Format the partition using the FAT file system (Quick)**, **Format the partition using NTFS file system**, **Format the partition using the FAT file system**, or **Convert the partition to NTFS**. Connectix recommends FAT32 for the best compatibility with Virtual PC 6.
17. **Regional and Language Settings:** Click **Next** to accept the default settings and continue.
 - a. Click **Customize** to change the regional and language settings.
 - b. Click **Details** to change the text input language and method.
18. **Personalize Your Software:** enter a name and optionally an organization. Click **Next** to continue.
19. **Your Product Key:** Enter the 25-character Product key from the Windows 2000 Certificate of Authenticity. Click **Next** to continue.
20. **Computer Name:** Setup will suggest a computer name, or enter a custom name. Click **Next** to continue.
21. **Date and Time Settings:** Verify the correct date and time are displayed, click **Next** to continue.
22. **Network Settings:** Select **Typical Settings** and click **Next** to continue.
23. **Display Settings:** click **Ok** to continue.
24. **Monitor Settings:** click **Ok** if the text box is readable.
25. **Welcome to Microsoft Windows:** click **Next** to continue.
26. **Checking Internet connectivity:** if there is no Internet connection, click **Skip**.
27. **Will this computer connect to the Internet directly, or through a network:** select the type of connection you have and click **Next**, or click **Skip** to cancel.
28. **Ready to activate Windows?:** Select **Yes** or **No** and click **Next**.
29. **Register with Microsoft:** Select whether or not to register with Microsoft and click **Next**.
30. **Who will use this computer:** enter at least one name and click **Next**.
31. Click **Finish** to complete setup.

Installing the VPC Additions in Windows XP Home

The VPC Additions provide the following:

- Mouse Integration: Allows the mouse to move freely between Windows and Mac desktops.
- Shared Folders: Allows you to access folders and files on the Mac
- Performance enhancements: Adds optimized video drivers to increase the performance of Windows.
- Drag and Drop: Allows you to copy files from the Windows desktop to the Mac desktop and vice-versa.
- Time synchronization: Synchronizes the time in Windows to match the Mac's time.
- Dock Application support: Allows you to dock Windows applications in the OS X's dock.

You must be logged in with administrator privileges to install the VPC Additions. If you are logged in with the account created during installation, you have Administrator privileges.

1. Log onto Windows. You must be at the desktop, where you can see the icons like My Computer.
2. Press the Command key and move the mouse outside of Windows to release the mouse.
3. Click the 'Puzzle Piece' icon on the VPC Toolbar. The Puzzle Piece is the right-most icon in the VPC Toolbar. When you click the Puzzle Piece, a pop-up menu will appear, click **Install Additions**.
4. This will launch the Virtual PC Additions setup.
5. **Virtual PC Additions Setup**: Select **I agree to the terms of this license agreement**. Click **Next** to continue.
6. **Information**: Click **Next** to continue.
7. **Ready to Install**: Click **Next** to continue.
8. **Restart the Guest OS**: Click **Finish**.

Windows XP Speed Optimizations

To increase Windows speed, here are some tips.

Visual Effects

These optimizations minimize the changes to the XP visual effects.

- Turn off the mouse pointer shadow:
 - Click **Start**, then **Control Panel**.
 - **Control Panel:** Click **Switch to Classic View**.
 - **Control Panel:** Double-click **Mouse**.
 - **Mouse Properties:** Click the **Pointers** tab.
 - **Mouse Properties:** Deselect **Enable pointer shadow** and click **OK**.
- Disable transition effects for menus:
 - Click **Start**, then **Control Panel**.
 - **Control Panel:** Click **Switch to Classic View**, if not already in Classic View.
 - **Control Panel:** Double-click **Display**.
 - **Display Properties:** Click the **Appearance** tab, then click **Effects...**
 - **Effects:** Deselect **Use the following transition effect for menus and tooltips**, click **OK**.
 - **Display Properties:** Click **OK**.

Alternately, this will turn off all the XP visual effects of Windows XP, switching to the ‘classic’ Windows 2000 look. This will provide a greater increase in performance than the options above.

- Disable Visual Effects: This will disable the visual effects of Windows XP
 - Click **Start**, then **Control Panel**.
 - **Control Panel:** Click **Switch to Classic View**, if not already in Classic View.
 - **Control Panel:** Double-click **System**.
 - **System Properties:** Click the **Advanced** tab
 - **System Properties:** Click **Settings** under **Performance**.
 - **Performance Options:** Select **Adjust for best performance**

Windows Desktop

- Disable the Windows XP background
 - Click **Start**, then **Control Panel**.
 - **Control Panel:** Click **Switch to Classic View**, if not already in Classic View.
 - **Control Panel:** Double-click **Display**.
 - **Display Properties:** Click the **Desktop** tab. Select **None** from the **Background** list. Click **OK**.

Virtual Memory (Paging file)

- Set a fixed page file:
 - Click **Start**, then **Control Panel**.
 - **Control Panel:** Click **Switch to Classic View**, if not already in Classic View.
 - **Control Panel:** Double-click **System**.
 - **System Properties:** Click the **Advanced** tab
 - **System Properties:** Click **Settings** under **Performance**.
 - **Performance Options:** Click the **Advanced** tab.
 - **Performance Options:** Click **Change** under **Virtual Memory**.
 - **Virtual Memory:** Under **Custom size**, set the **Initial Size (MB)** and **Maximum Size (MB)** of the page file to 1 to 1.5 times the RAM assigned to Windows XP. Click **Set**, then click **OK**.
 - **System Control Panel Applet:** Click **Ok**. You may not receive this message
 - **Performance Options:** Click **OK**.
 - **System Properties:** Click **OK**.
 - **System Settings Change:** Click **Yes** or **No**, to restart the computer now.

Installing Windows 2000 Professional

Installation Notes:



Virtual PC Toolbar: Located in the lower left corner of the guest's window, the VPC Toolbar items provide information about the status of your guest PC, from left to right: Hard Drive, CD/DVD-ROM, Floppy Disk,

Shared Folders, Network, USB, Printing Info, and Additions Installer/PC Info. The tool bar also provides a number of convenient features that are accessed by contextual menus (click the icon) or by dragging items onto the tool bar icons. A CD-ROM ISO image or floppy disk image can easily be mounted in the guest by dragging the disk image and dropping it on the respective VPC tool bar icon. See the Virtual PC help for more information. To release a CD-ROM or Floppy disk image click the appropriate icon and select **Release *diskname***.

When prompted to press enter, you may also press return on the Mac keyboard.

If you do not have a bootable Windows 2000 CD-ROM, see the end of this document for information on booting from floppy disk images.

If you receive the message, "The Virtual PC Additions are not installed in the PC", click **Don't show this message again** and click **Cancel**. The VPC Additions can only be installed after Windows is completely installed.

Creating a new guest PC:

1. Launch Virtual PC
2. From the Virtual PC List, click **New**. If the Virtual PC list does not show up, press **command+L** or click **Window** then **Virtual PC List**.
3. **Select a Setup Method:** Select **Create a PC Manually** and click the right arrow.
4. **Select a Hard Drive Data Source:** Select **Install an operating system onto an empty PC** and click the right arrow.
5. **Select an Operating System:** Select **Windows 2000** and click the right arrow.
6. **Select a Memory Setting:** Adjust the memory to 128MB of RAM and click the right arrow.
7. **Undo Drives:** Do not select Undo Drives for the installation. Undo drives can be enabled after the installation. Click the right arrow.
8. **Select a PC Name:** The default name will be Windows 2000, change the description if desired. Click the right arrow.
9. **Conclusion:** Click **Create** to finish the guest creation.

Installing the Windows 2000 OS:

10. Insert the Windows 2000 CD-ROM, wait until the CD-ROM is mounted on the Mac desktop.
11. **Virtual PC List:** Click **Start Up**.
12. After clicking **Start Up**, a black screen will appear. A prompt will appear, **Press any key to boot from CD...** Press **return** to begin the installation.
13. **Welcome to Setup:** Press **enter** to begin the Windows 2000 setup.
14. **Windows 2000 Licensing Agreement:** Press **F8** to agree to the license.
15. **Windows 2000 Professional Setup:** Press **enter** to install.

16. **Windows 2000 Professional Setup:** Press **enter** to leave the partition intact and install Windows 2000 on FAT32. Connectix recommends FAT32 for the best compatibility with Virtual PC.
17. The Windows setup will restart; do not press any key. Windows will continue the installation automatically.
18. **Regional Settings:** Click **Next** to continue if the default settings are correct.
19. **Personalize Your Software:** Enter your name and organization. Only a name is required to continue the installation. Click **Next** to continue.
20. **Your Product Key:** Enter the Windows 2000 product key and click **Next**.
21. **Computer Name and Administrator Password:** Enter a name for the Windows 2000 computer and an administrator password. Make sure you can remember the administrator password. Click **Next** to continue.
22. **Date and Time Settings:** Verify the date, time and time zone, adjust if necessary. Click **Next** to continue.
23. **Networking Settings:** The **Typical settings** should work in most network environments. Click **Next** to continue.
24. **Workgroup or Computer Domain:** If this computer will be part of a business network, select **Yes, make this computer a member of the following domain** and enter the domain's name. You must have the proper permissions to add the computer to the network. If your computer will not be part of a business network or you are unsure, leave the settings on the default selection. These settings can be changed at any time. Click **Next** to continue.
25. **Completing the Windows 2000 Setup Wizard:** Click **Finish**. Windows will restart.
26. Eject the Windows 2000 CD-ROM.
27. **Welcome to the Network Identification Wizard:** Click **Next** to continue.
28. **Users of This Computer:** Select the option you prefer. If there will only be one user, the default option will automatically log on a specified user. For additional security, or multiple users, select **Users must enter a user name and password to use the computer**. For the purposes of this procedure, the default option was used. Click **Next** to continue.
29. **Completing the Network Identification Wizard:** Click **Finish**.

Starting the Windows 2000 installation from Floppy disk:

- a. Windows 2000 CD-ROMs include 4 floppy disk images for booting. These images can be directly mounted in Virtual PC and booted from. The floppy disk images are located in the **BOOTDISK** directory of the Windows 2000 CD-ROM, the files are: **cdboot1.img**, **cdboot2.img**, **cdboot3.img**, and **cdboot4.img**.
- b. Copy the four boot disk images to an easily accessible location on the host machine.
- c. Click **Start Up** and mount the first disk image, **cdboot1.img**. If the message, **OS not found, Install an OS on this hard drive** is displayed, press the **Enter** key and another message should be displayed, **Reboot and Select proper Boot device or Insert Boot Media in selected boot device**. Press **Enter** again and the guest should begin booting off the floppy disk image. Alternately, press the *hostkey*+**R** to restart the system with the floppy disk image.
- d. Verify that the Windows 2000 CD-ROM or ISO image is mounted in the guest PC. Follow the on-screen prompts and mount the remaining three floppy disk images when asked.
- e. Continue with the standard installation above, starting with step 13.

NOTE After setup copies files from the CD-ROM, be sure to remove the floppy disk image before rebooting.

Installing the VPC Additions in Windows 2000

The VPC Additions provide the following:

- Mouse Integration: Allows the mouse to move freely between Windows and Mac desktops.
- Shared Folders: Allows you to access folders and files on the Mac
- Performance enhancements: Adds optimized video drivers to increase the performance of Windows.
- Drag and Drop: Allows you to copy files from the Windows desktop to the Mac desktop and vice-versa.
- Time synchronization: Synchronizes the time in Windows to match the Mac's time.
- Dock Application support: Allows you to dock Windows applications in the OS X's dock.

You must be logged in with administrator privileges to install the VPC Additions. If you are logged in with the account created during installation, you have Administrator privileges.

1. Log onto Windows. You must be at the desktop, where you can see the icons like My Computer.
2. Press the Command key and move the mouse outside of Windows to release the mouse.
3. Click the 'Puzzle Piece' icon on the VPC Toolbar. The Puzzle Piece is the right-most icon in the VPC Toolbar. When you click the Puzzle Piece, a pop-up menu will appear, click **Install Additions**.
4. This will launch the Virtual PC Additions setup.
5. **Virtual PC Additions Setup**: Select **I agree to the terms of this license agreement**. Click **Next** to continue.
6. **Information**: Click **Next** to continue.
7. **Ready to Install**: Click **Next** to continue.
8. **Restart the Guest OS**: Click **Finish**.

Installing Windows 98

Installation Notes:



Virtual PC Toolbar: Located in the lower left corner of the guest's window, the VPC Toolbar items provide information about the status of your guest PC, from left to right: Hard Drive, CD/DVD-ROM, Floppy

Disk, Shared Folders, Network, USB, Printing Info, and Additions Installer/PC Info. The tool bar also provides a number of convenient features that are accessed by contextual menus (click the icon) or by dragging items onto the tool bar icons. A CD-ROM ISO image or floppy disk image can easily be mounted in the guest by dragging the disk image and dropping it on the respective VPC tool bar icon. See the Virtual PC help for more information. To release a CD-ROM or Floppy disk image click the appropriate icon and select **Release *diskname***.

When prompted to press enter, you may also press return on the Mac keyboard.

Very few Windows 98 CD-ROMs are bootable. In order to install Windows 98, a boot disk with CD-ROM drivers that is capable of seeing a FAT32 partition is required. A Windows 98SE Emergency Boot Disk is available for download from the Connectix FTP site here: **FTP://win98ebd:win98ebd@care.connectix.com/users/win98ebd/win98ebd.vfd**

Copy the above link into a web browser address bar and download the file.

If you receive the message, "The Virtual PC Additions are not installed in the PC", click **Don't show this message again** and click **Cancel**. The VPC Additions can only be installed after Windows is completely installed.

Creating a new guest PC:

1. Launch Virtual PC
2. From the Virtual PC List, click **New**. If the Virtual PC list does not show up, press **command+L** or click **Window** then **Virtual PC List**.
3. **Select a Setup Method:** Select **Create a PC Manually** and click the right arrow.
4. **Select a Hard Drive Data Source:** Select **Install an operating system onto an empty PC** and click the right arrow.
5. **Select an Operating System:** Select **Windows 98** and click the right arrow.
6. **Select a Memory Setting:** Adjust the memory to 96MB of RAM and click the right arrow.
7. **Undo Drives:** Do not select Undo Drives for the installation. Undo drives can be enabled after the installation. Click the right arrow.
8. **Select a PC Name:** The default name will be Windows 98, change the description if desired. Click the right arrow.
9. **Conclusion:** Click **Create** to finish the guest creation.

Installing Windows 98

10. Insert the Windows 98 CD-ROM and wait until it mounts to the Mac desktop.
11. **Virtual PC List:** Click **Start Up**.
12. After clicking **Start Up**, a black screen will appear with the prompt: **OS not found. Install an OS on this hard drive.**
13. Drag and drop the **Win98ebd.vfd** floppy disk image onto the floppy disk icon on the VPC Toolbar.
14. Click the Virtual PC “Windows 98” window to make it the active window. Press **return**.
15. **Microsoft Windows 98 Startup Menu:** Select **Start computer with CD-ROM support** using the arrow keys on the keyboard and press **return**.
16. When the floppy disk image has finished booting, change to the CD-ROM drive, **D:**. To change to drive **D:**, type **d:** and press **Enter**. This will change the prompt on the screen from **A:>** to **D:>**
17. To reduce the installation time, launch **smartdrv.exe**.
 - a. This file is usually located in the **win98** directory. Change to the **win98** directory by typing **cd win98**.
 - b. Type **smartdrv** and press **return** to run **smartdrv**. **SmartDRiVe** is a disk caching utility that will reduce the amount of time required to copy the setup files. **Note:** this is not necessary to install Windows 98.
18. Type **setup** and press **return** from the **win98** directory on the CD-ROM.
19. Press **return** for the Windows 98 setup to run **scandisk** and verify the disk.
20. **Microsoft Scandisk:** Press **Tab** to select **Exit** and press **Enter** to exit **scandisk** and continue the installation. This step may not be required with all Windows 98 CD-ROMs.
21. **Welcome to the Windows 98 Setup:** Click **Continue**. This step may not be required with all Windows 98 CD-ROMs.
22. **License Agreement:** Select **I accept the Agreement** and click **Next** to continue the installation.
23. **Product Key:** Enter the 25 digit product key and click **Next** to continue.
24. **Select Directory:** The default directory for Windows 98 is **C:\Windows**, to accept this and continue, click **Next** to continue.
25. **Setup Options:** Select the setup option **Typical** and click **Next** to continue.
26. **User Information:** Enter **Name** and **Company** information and click **Next** to continue. Company information is not required, only a name.
27. **Windows Components:** Select **Install the most common components (Recommended)** and click **Next** to continue.
28. **Establishing Your Location:** Select the appropriate country or region from the list and click **Next** to continue.
29. **Startup Disk:** Click **Next** to launch the Startup Disk Wizard.
 - a. Insert Disk: Click **Cancel** to cancel and not make a Startup Disk,
30. **Start Copying Files:** Click **Next** to begin copying the Windows 98 files to the guest PC.
31. **Restart Computer:** When Setup has finished copying files, click **Restart Now** or wait and let Setup restart the guest PC.

NOTE Be sure to remove any floppy disks, floppy disk images, or CD-ROMs before restarting the Windows 98 guest PC.

32. **Network:** Click **OK** to provide a computer and workgroup name.
 - a. Enter a unique **Computer name**, **Workgroup**, and, if desired, a **Computer Description**.
 - b. Click **Close**.
33. **Date/Time Properties:** Select the correct **Time Zone**.
 - a. Click **Date & Time** to verify the date and time, adjust if necessary.
 - b. Click **Close**.
34. **Restart Computer:** When Setup has finished copying files, click **Restart Now** or wait and let Setup restart the guest PC.

NOTE Be sure to remove any floppy disks, floppy disk images, or CD-ROMs before restarting the Windows 98 guest PC.
35. **Enter Network Password:** The Windows 98 installation is nearly complete. There is no password set up yet. Click **OK** to log onto Windows 98.
36. Windows will finalize the installation and boot to the desktop. Installation is complete.

Installing the VPC Additions in Windows 98

The VPC Additions provide the following:

- Mouse Integration: Allows the mouse to move freely between Windows and Mac desktops.
 - Shared Folders: Allows you to access folders and files on the Mac
 - Performance enhancements: Adds optimized video drivers to increase the performance of Windows.
 - Drag and Drop: Allows you to copy files from the Windows desktop to the Mac desktop and vice-versa.
 - Time synchronization: Synchronizes the time in Windows to match the Mac's time.
 - Dock Application support: Allows you to dock Windows applications in the OS X's dock.
1. Log onto Windows. You must be at the desktop, where you can see the icons like My Computer.
 2. Press the Command key and move the mouse outside of Windows to release the mouse.
 3. Click the 'Puzzle Piece' icon on the VPC Toolbar. The Puzzle Piece is the right-most icon in the VPC Toolbar. When you click the Puzzle Piece, a pop-up menu will appear, click **Install Additions**.
 4. This will launch the Virtual PC Additions setup.
 5. **Virtual PC Additions Setup:** Select **I agree to the terms of this license agreement**. Click **Next** to continue.
 6. **Information:** Click **Next** to continue.
 7. **Ready to Install:** Click **Next** to continue.
 8. Restart the Guest OS: Click **Finish**.

Installing Red Hat Linux 8.0

Installation Notes:



Virtual PC Toolbar: Located in the lower left corner of the guest's window, the VPC Toolbar items provide information about the status of your guest PC, from left to right: Hard Drive, CD/DVD-ROM, Floppy

Disk, Shared Folders, Network, USB, Printing Info, and Additions Installer/PC Info. The tool bar also provides a number of convenient features that are accessed by contextual menus (click the icon) or by dragging items onto the tool bar icons. A CD-ROM ISO image or floppy disk image can easily be mounted in the guest by dragging the disk image and dropping it on the respective VPC tool bar icon. See the Virtual PC help for more information. To release a CD-ROM or Floppy disk image click the appropriate icon and select **Release *diskname***.

When prompted to press **enter**, you may also press **return** on the Mac keyboard.

This installation guide will provide a basic 'workstation' installation of Red Hat 8 Linux. For a more advanced installation, see www.redhat.com for additional installation help and configuration of advanced services.

If you receive the message, "The Virtual PC Additions are not installed in the PC Red Hat Linux 8", click **Don't show this message again** and click **Cancel**. Currently, VPC Additions are only available for Windows 95/98/ME/NT/2000/XP.

If downloading Red Hat 8, make sure to download the .ISO CD-ROM images for an easier installation. Save all five CD-ROM .ISO images to an easily accessible location on the Mac.

Creating a new guest PC:

1. Launch Virtual PC
2. From the Virtual PC List, click **New**. If the Virtual PC list does not show up, press **command+L** or click **Window** then **Virtual PC List**.
3. **Select a Setup Method:** Select **Create a PC Manually** and click the right arrow.
4. **Select a Hard Drive Data Source:** Select **Install an operating system onto an empty PC** and click the right arrow.
5. **Select an Operating System:** Select **Linux** and click the right arrow.
6. **Select a Memory Setting:** Adjust the memory to at least 128MB of RAM and click the right arrow. * Red Hat Linux requires 128MB of RAM for a graphical interface.
7. **Undo Drives:** Do not select Undo Drives for the installation. Undo drives can be enabled after the installation. Click the right arrow.
8. **Select a PC Name:** The default name will be Linux, change the description to Red Hat Linux 8. Click the right arrow.
9. **Conclusion:** Click **Create** to finish the guest creation.
10. If you would like to adjust the RAM or video RAM, click **Settings**. For the purpose of this procedure, 128MB of RAM and 8MB of video RAM was assigned to the PC.
 - a. Click **PC Memory**. Move the memory sliders to the amount you want. Too much memory assigned to a Virtual PC guest can negatively affect performance.
 - b. Click **OK**.

Installing Red Hat 8.0 Linux:

11. If installing from CD-ROM, insert disc 1 one and allow it to mount to the desktop. If installing from an ISO image, go to next step.
12. Click **Start Up**. If you are installing from a CD-ROM, the Red Hat install screen will appear. Go to step 13.
13. If you are installing from ISO images, drag and drop disc 1 on the CD-ROM icon on the VPC tool bar. Restart the guest PC, click **Control**, then **Restart**. When prompted to restart, click **Restart**. The Red Hat install screen will appear.
14. **Red Hat Linux 8.0:** Press **enter** to install Red Hat.
15. **CD Found:** Press the **TAB** key to select **Skip**, then press **enter**.
16. **Welcome to Red Hat Linux:** Click **Next** to continue.
17. **Language Selection:** Select the correct language and click **Next**. For the purposes of this procedure, English was used. Click **Next** to continue.
18. **Keyboard Configuration:** Select the correct keyboard and click **Next**. For the purposes of this procedure, U.S. English was used. Click **Next** to continue.
19. **Mouse Configuration:** Select **2 Button Mouse (PS/2)** or if you have a wheel mouse, select **Wheel Mouse (PS/2)**. Click **Next** to continue.
20. **Installation Type:** Select **Custom** and click **Next**.
21. **Disk Partitioning Setup:** Use the default, **Automatically partition**. Click **Next** to continue.
22. **Warning:** Click **Yes** to initialize the drive.
23. **Automatic Partitioning:** Select **Remove all partitions from this system**. Click **Next** to continue.
24. **Warning:** Click **Yes** to remove all partitions.
25. **Disk Setup:** Click **Next** to continue.
26. **Boot Loader Configuration:** Click **Next** to continue.
27. **Network Configuration:** Click **Next** to continue.
28. **Firewall Configuration:** Click **Next** to continue.
29. **Additional Language Support:** Click **Next** to continue.
30. **Time Zone Selection:** Select the correct time zone. Click **Next** to continue.
31. **Account Configuration:** Enter a password for the Root account. Click **Add** to add a standard user account.
 - a. **Add a User Account:** Enter a user name, password and full name. Click **OK** when finished.
 - b. Click **Next** to continue.
32. **Authentication Configuration:** Click **Next** to continue.
33. **Package Group Selection:** Select the following packages:
 - a. **KDE Desktop Environment**
 - b. **Editors**
 - c. Click **Details** for **Sound and Video**. From the **Optional Packages** select **sndconfig**, this package is required to configure sound in Red Hat 8 under Virtual PC. Click **OK**.
 - d. **Development Tools**
 - e. **Administration Tools**
 - f. **System Tools**

- g. Additional packages may be selected.
- h. Click **Next** to continue.
- 34. **About to Install:** Click **Next** to continue.
- 35. **Change CD-ROM:** Insert disc 2 and click **OK**. To release the mouse cursor, hold the command key and move the mouse outside of the Red Hat 8 window. Make sure the CD-ROM is captured properly before clicking **OK**. To mount an ISO image, drag and drop the disc2 ISO file onto the CD-ROM icon in the VPC Toolbar.
- 36. **Change CD-ROM:** Insert disc 3 and click **OK**. To release the mouse cursor, hold the command key and move the mouse outside of the Red Hat 8 window. Make sure the CD-ROM is captured properly before clicking **OK**. To mount an ISO image, drag and drop the disc3 ISO file onto the CD-ROM icon in the VPC Toolbar.
- 37. **Boot Disk Creation:** Select **No, I do not want to create a boot disk**. Click **Next** to continue.
- 38. **Graphical Interface (X) Configuration:** Select **Other-->VESA driver (generic)** for the video card. Select the amount of RAM you want to allocate for video memory. The default assigned to Virtual PC guests is 4MB, up to 16MB of video memory can be assigned to Virtual PC. For this procedure, 8MB of video RAM was selected. Click **Next** to continue.

NOTE You must also select the same amount of memory in the guest PC Settings for video memory.

- 39. **Monitor Configuration:** Select a monitor from the **Generic** group that closely matches your actual monitor or LCD display. Some custom Powerbook resolutions may not be exactly matched. Click **Next** to continue.
- 40. **Customize Graphics Configuration:** Select a **Color Depth** and **Screen Resolution** for X. Virtual PC does not support True (24-bit) color. Click **Next** to continue.

IMPORTANT Do not click **Test Setting**. This will result in a garbled display and will prevent the installation from finishing properly.

- 41. **Congratulations:** Click **Exit** to complete the installation and restart Red Hat Linux.
- 42. Eject the CD-ROM or release the ISO CD-ROM image.
- 43. Once Linux reboots, you can log in with the user you created in step 31.

Configure Sound in Red Hat Linux 8.0

- 1. Log into Red Hat Linux.
- 2. Start a terminal session, click the 'Red Hat', **System Tools**, then **Terminal**.
- 3. Type **su** and press **Enter**.
- 4. Enter the root password and press **Enter**.
- 5. Type **cd /sbin** and press **Enter**
- 6. Type **./sndconfig** and press **Enter**.
- 7. **Introduction:** Press **Enter**.
- 8. **Probe Results:** Press **Enter**.
- 9. **Card Type:** Select **Sound Blaster 16** and press **Enter**.
- 10. **Card Settings:**

Installing Red Hat Linux 8.0

- a. **I/O Port:** Select **0x220** and press **Tab**.
 - b. **IRQ:** Select **5** and press **Tab**.
 - c. **DMA 1:** Select **1** and press **Tab**.
 - d. **DMA 2:** Select **5** and press **Tab**.
 - e. **MPU I/O:** Select **0x330** and press **Tab**.
 - f. Press **Enter**
11. **Sound Card Test:** Press **Enter**
- NOTE** Sound volume may be very low, adjust speakers accordingly.
12. **Test Result:** Press **Enter** if sound was heard, if not, **Tab** to select **No** and press **Enter**.
- NOTE** If no sound was heard, the most likely cause is lack of volume
13. **File Exists:** press **Enter** to overwrite the existing config file.
14. Type **exit** and press **Enter** to exit the root console.
15. Type **exit** and press **Enter** to exit the standard console.

Configure Time Sync Addition in Red Hat Linux 8.0 (Unsupported)

NOTE Connectix offers an unsupported time sync addition for Linux and BSD guests; however, Connectix does not support the time sync addition. To install the timesync daemon, the **make** and **gcc** utilities and libraries must be installed.

1. Log onto Red Hat Linux.
2. Launch an Internet browser.
3. In the address bar, type **ftp://linuxadditions:password@care.connectix.com/users/linuxadditions**
4. From *LinuxAdditions*, download *vpctimed-1.0-src.tar.gz*, and save to */tmp* directory.
5. Open a console: click the console icon on the kicker panel. Open a root console.
6. Change to the root directory: type **cd /tmp** and press **Enter**. Verify that *vpctimed-1.0-src.tar.gz* is available, type **ls** and press **Enter**.
7. Unzip and untar the file: type **gzip -cd vpctimed-1.0-src.tar.gz | tar -xvf -**
8. Change to the *vpctimed* directory: type **cd vpctimed** and press **Enter**.
9. Change to the *linux* directory: type **cd linux** and press **Enter**.
10. Compile the program: type **make** and press **Enter**.
11. Install the software: type **make install** and press **Enter**.
12. Type **exit** and press **Enter** to exit the root console.
13. Type **exit** and press **Enter** to exit the terminal session.
14. Restart Linux and the time sync addition will load automatically.

Installing Your Own Guest OS in Virtual PC 6

For additional information on Microsoft Windows, please see <http://www.microsoft.com/windows>

For additional information on Red Hat Linux, please see <http://www.redhat.com>

For information of Connectix technical support, please see <http://www.connectix.com/support>

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