Connectix *How To Guide*: Transferring Windows 98 to a New Dynamically-Expanding Drive Image

Virtual PC 4.0 provides a number of new features for drive images, including drive images that dynamically expand. These new features are only present, however, for drive images created with Virtual PC 4.0. Drive images created with earlier versions of Virtual PC, while useable with Virtual PC 4.0, do not have any of these new features.

There are three ways that a Virtual PC user who is upgrading to Virtual PC 4.0 can get these new drive image features:

- Use a drive image that is provided by Connectix with Virtual PC 4.0. These drive images are pre-configured with an operating system (for example, Windows 98). If you do this, you will want to re-install your Windows application and move over your data files from your earlier drive image.
- Create a new blank drive image with Virtual PC 4.0, and install an operating system yourself from a Microsoft CD that you own. In this case also, you will want to re-install any Windows applications and data from your earlier drive image.
- Create a new blank drive image with Virtual PC 4.0, and copy over the entire contents of your previous drive image. If you do this, you will not have to re-install any Windows applications in the previous drive image. The procedure for this option is described in detail in this paper.

While conceptually simple, copying the contents of a bootable Windows drive image to a new drive involves a large number of steps, due to certain complexities of Windows. For this reason, Connectix recommends that all the steps documented in this paper be followed exactly.

The procedure in this paper is designed for a Windows 98 drive image. Other papers describe similar procedures for Windows 95, Windows Me, Windows NT, Windows 2000, DOS, and Red Hat Linux.

While the procedure in this paper will not alter the contents of your earlier drive image, making a backup copy of your drive image is always recommended before performing any major operation such as this one.

This paper also assumes that you are familiar with Virtual PC 4.0, have read the introductory chapters of the Virtual PC 4.0 manual, and are familiar with the vocabulary of Virtual PC 4.0.

Step 1. If your Windows 98 virtual machine has a saved state, launch Virtual PC and shut down Windows without saving state. Quit Virtual PC and make a backup copy of your drive image.

Window	<u>S</u> cripts <u>H</u> elp	
Virtual	PC List	ЖL
Virtual	Disk Assistant	ЖD
Pause	Others	
Show A	AI .	
Cycle T	hrough PCs	ж∼
Windo	ws 98 SE (up to 10 GB)	₩1
PC DOS		₩2

Step 2. Launch Virtual PC 4.0. From the Virtual PC Window menu, open the Virtual PC List.

Step 3. From the PC List, click New to create a new virtual machine.

į.	Default	New
	Saved	Settings
(a)	My Win98	Delete
Connectix	Not Running	Shut Down
and a second	PC DOS	
	Running	
e	Test	

Step 4. Name your new PC, then click the right arrow to continue. Choose the "Guide Me" option and click the right arrow to continue.

PC Setup Assistant	E
PC Name	1
This assistant will guide you through the process of s settings for your new PC.	electing the
Please enter the name for your new PC and click the to continue. The PC name typically indicates its hards software configuration.	right arrow ware or
×	
New PC Name: New PC	
	Cancel
Click the right arrow to continue.	
N	

Step 5. Set the desired memory setting for the PC. (64MB is the default and is optimal for Windows 98.)



Step 6. Choose "Select an existing drive image" and then click the right arrow.

PC Setup Assistant	
C Drive Options	R.
The primary drive (Drive C) holds the operating system, programs, and data. You can either select an existing drive or create a new drive.	
Select an existing drive image	
🔘 Create a new drive image	
Select an option and click the right arrow to proceed.	
К	

Step 7. Locate the drive image file you want to transfer from your previous version of Virtual PC. Click the right arrow to continue.

PC Setup Assistant	
Select Drive C	R
To select a floppy or hard drive image, click on the "Select Disk" button or drag an image file from the Finder to the box below:	
Selected Disk: 🛛 🔒 Windows 98 from VPC 3.0	
Select	Disk
Click on the right arrow to continue.	
М	4 5 D

Step 8. For D Drive Options, choose "Create a new drive image" and click the right arrow.

PC Setup Assistant	E
D Drive Options	R.
The optional secondary drive (Drive D) holds programs and data. If you want a secondary drive, you can select an existing drive or create a new drive.	
No secondary drive	
Select an existing drive image	
Create a new rive image	
Select an option and click the right arrow to proceed.	
И	46₽

Step 9. Select the location where you want the new drive to be created and name the drive. Click the right arrow to continue.

	PC Setup Assistant	
Create	Drive D - Choose Location	
Dr selt Lacath	nt's hard prise lacation and name, silica on t m., " lighter,	in "Select Srove
2	n Insultan assisted. Click on the "Solart Driv duct the name and Insultan of the new Arrow	e Landien ^{es} în
		Select Drive Location
Visa must	tellect a drive teration to proceed.	14 Billio
(79)	Save: Select New Hard Drive	Location
The second		
CI VIII	•	0. 0. 0.
N	une .	Date Hodified
0.0		11/25/00
90	(17)80	11/25/00
Bin	and the local sector of th	Variation
1.1.4	TOP, I we MAN	11/16/00
8	rijb	11/25/00
Name:	New Windows 98 for VPC 4.0	New
3098 M	6 available	
2	C 700	and J Salart
5	a	scient Scient

Step 10. Under "Specify Operating System" choose Windows 98. Click the right arrow to continue.

	PC Setup Assistant	E
Create Driv	re D - Specify Operating System	Z
In preparat operating s	ion for creating your hard drive image, please select the ystem you plan to use with it.	
	DOS	
	Windows 3.1	
	Windows 95	
	Windows 98	
	Windows Me	
	Windows NT	
	Windows 2000	
	Linux	
	Other	
	80	
Click on the ri	ght arrow to continue.	
И		8

Step 11. To choose the drive capacity, you can proceed with the default option, which will create a dynamically expanding drive, or you can check the Advanced Options button to specify a custom size. Click "Create Drive" after you have selected your drive creation options.

PC Setup Assistant 📃 🗄 🗏
Create Drive D - Choose Drive Capacity
The Virtual Disk Assistant has determined the recommended disk type and capacity. You may override these defaults to choose different options.
Current drive options:
Dynamically-expanding drive Maximum capacity of 16384 MB (16 GB) Create Drive
Advanced Options
Oynamically Expanding Drive Image
Fixed Space Drive Image
🗹 Zero Drive Image
Capacity: 16384 MB (3 to 130557 MB)
Click on the "Create Drive" button to create the drive.
K 49 k

Step 12. Once the drive has been created and you see the message "The Drive was created successfully", click the right arrow and select from the remaining options for the PC (modem and PDA). You can then launch the new virtual machine by clicking "Start Up" from the PC List after you have completed the Setup Assistant.

PC Setup Assistant
Setup Complete
The Setup Assistant is done creating your PC. Click "Done" to continue or "Start Up" to start the PC.
Start Up Done
Click the left arrow to go back and make changes.
[4] [2] ▷

Step 13. After you Start Up the new PC, Windows will begin loading. When Windows has finished booting, disable any virus scanner you have running (if any), and shut down any programs you have running. If you are prompted to perform a VPC Additions update, do so if you will want to use this previous drive image with Virtual PC 4.0. If you are planning on using only the new expanding drive image with Virtual PC 4.0, then you can update the VPC Additions later in that new drive only.

	Please update to the latest Virtual PC Additions. Virtual PC Additions add Drag & Drop, Folder Sharing, and Integrated Mouse to Windows. To update these features, run the Virtual PC Additions Installer within Windows.
	For further information, consult Virtual PC Help.
0	Don't show this message again
	Virtual PC has determined your additions are out of date. Would you like to update them?
	Virtual PC has determined your additions are out of date. Would you like to update them? Virtual PC Additions add Drag & Drop, Folder Sharing, and Integrated Mouse to Windows. Would you like to run the Virtual PC Additions installer within Windows now?

Step 14. To make sure there are no programs running inside Windows, press CTRL+Option+Del to bring up the Windows Task Manager. (On Apple keyboards without a forward delete key, this key sequence will be SHIFT+CTRL+Option+Delete.) The only applications left running should be Explorer, Systray and Vpchelp. Other applications can be closed by highlighting the application and choosing "End Task." You will need to invoke the Task Manager for each application you must close in this manner.

Explorer Systray Vpchelp	
/ARNING: Pressi	ain will restart your

Step 15. Empty the Recycle Bin on your Windows desktop.



Step 16. Open the settings window for your virtual machine by choosing the last menu item on the Edit menu.

Edit	
Undo	ЖZ
Cut	ЖΧ
Сору	жc
Paste	жv
Clear	
Select All	ЖA
Preferences	≋к
"New Win 98 PC" Settings	ЖE

Step 17. Select the Mouse settings, and click on the Shift-click setting for the Right Mouse Button. Click OK to close this window.

PC Settings for "New Win 98 PC"			
Current PC Settings		🕀 Mouse Settings	
🔒 PC Name	"New Win 98 PC"	Right Mouse Button :	
💮 Processor	MMX Enabled	Shift-click	
📟 PC Memory	64 MB	Control-click	
😑 C Drive	Windows 95 (1GB)	Key Sequence None	
🚍 D Drive	None		
🚍 E Drive	None	PC Cursor Tracks Macis Mouse	
💿 CD-ROM	Booting Allowed		
🖹 Floppy	Booting Allowed	The Mac mouse has only one button. Select a way to indicate the PC's right mouse button is	
🐚 Shared Folders	Not installed	pressed.	
😗 Mouse	Shift-click		
📟 Keyboard	Keys Not Assigned		
🚌 COM1 Port	None		
📺 COM2 Port	None		
≪-≫ Networking	Enabled (Shared IP)		
⊷⇔ USB	No devices in use	Cancel OK	
	•		

💻 My Compu	ter					
<u><u> </u></u>	<u>V</u> iew <u>G</u> o	F <u>a</u> vorites <u>H</u> e	elp			-
$] \Leftarrow \cdot \Rightarrow$	• 🖬 🐰		2 ×首	3-5- 3-5-		
					3	
3½ Floppy (A:)	Windows 98 (C:)		Pc disk (E:)	(F:)	Printers	
7	2	6				
Control Panel	Dial-Up Networking	Scheduled Tasks	Web Folders			
1 object(s) selec	ted		Free Sp 🛄	My Computer		

Step 18. In Windows, open My Computer and select the D: Drive.

Step 19. Press the Shift key and Enter together or perform a right-click on the D: Drive to bring up the Properties menu for the volume. Choose Format from the Properties menu.



Step 20. Select "Copy System Files Only." Press the Start button to proceed with the format and close the Format window when complete.

🖳 My Computer			- D ×
<u>∫ Eile E</u> dit <u>⊻</u> iew <u>G</u>	o Favorites <u>H</u> elp		
Format - (D:) Capacity: 49999.1 Mb 3½ Flopp Sontrol F Control F Other option: Label: Display s Copy sys	ase) tem files only s ummary when finished tem files	₹ <u>Start</u> <u>Close</u>	Image: Second system Image: Second system



Step 21. Go to the View menu and choose Folder Options.

Step 22. Select the View tab and select the "Show all files" button and click OK.

Ider Options			? ×
General View File Types			
Folder views			
You can make a	ll vour folders l	ook the sam	e
Like Current F		Reset All Fo	ders
Advanced settings:			
Eiles and Folders			
	nes		-
Display the full path in ti	ila Ha har		
Hidden files	ue Dai		
Do not show hiddor	, filos		
O Do not show hidder	i nies - er susters file	2	
Channell Glas	i or system nie	2	
Show all files			
	chown nie type	-8	
Chan Man Natural Di	s view settings	0000	
	ve bullon in lo	uldar Julaalaa iya	
Show pop-up descriptio	n toi toidei ani	u desktop ite	ans.
		1 200	
		Restore	<u>D</u> efaults
0		ancel	Apply
			ELE-F.V



Step 23. Open the C: Drive and open the Windows folder.

Step 24. If necessary, click the "Show Files" option in the left pane to view the files in the folder.



Step 25. You will now select ALL files in this folder *except* the Win386.swp file. Do this by choosing the Select All menu item from the Edit menu. *(Continued on next page.).*

Windows					_ [] >
<u>File Edit View G</u> o	F <u>a</u> vorites <u>H</u> e	lp			1
나 · <u>U</u> ndo Delete	×)×首			
Cu <u>t</u> C Copy 0 Easte 0 Paste <u>S</u> hortcut	Dtrl+X Dtrl+C Dtrl+V ers	Application Data	Applog	Catroot	-
Select <u>All</u> Invert Selection Warning	Command	Config	Cookies	Cursors	
Modifying the contents of this folder may cause your programs to stop working correctly.	Desktop	Downloaded Program Files	Drwatson	* Favorites	
Select an item to view its description.	Fonts	Help		Inf	
lects all items in the window.					

Step 25 (*continued***).** Then scroll down until you see the WIN386.SWP file. Hold the control key down while you click on the WIN386.SWP file to de-select it.





Step 26. Choose "Copy" from the Edit menu.



Step 27. Go back to My Computer and open the D: drive by double-clicking on it.

Step 28. Create a new folder by choosing "New" from the File menu and selecting "Folder."



Step 29. Type "Windows" for the folder name.

📾 (D:)	
∫ <u>F</u> ile <u>E</u> dit <u>V</u> iew <u>G</u> o F <u>a</u> vorites <u>H</u> elp	
↔・⇒・回%回唱の ×雪囲・	
Windows	
(D:)	
New Folder	
File Folder	
Modified:	
11/2//00 3:12 PM	
My Computer	

Step 30. Open the newly-named Windows folder and choose Paste from the Edit menu. Wait for the copy to complete. This may take several minutes.



Step 31. Once the file copy has completed, go to the C: Drive and select all files and folders *except* the Windows folder. (You will need to use the same Select All / Control-click operation as when selecting from the Windows folder in step 25.) Choose "Copy" from the Edit menu.



Step 32. Go to the D: Drive and Paste the files and folders to the D: Drive root. Click "Yes to All" when asked if you want to overwrite any existing files.

💼 (D:)			
<u> </u>	<u>E</u> dit ⊻iew <u>G</u> o	Favorites Help	
- 4- ·	<u>U</u> ndo Copy		
	Cu <u>t</u> Copy (Paste (Paste <u>S</u> hortcut	Ctrl+X Ctrl+C Ctrl+V ws Recycled	
	Select <u>A</u> ll (Invert Selection	Ctrl+A	
Selec view descr	t an item to its iption.		
Inserts th	e items you have copie	ed or cut into the selected location.	1.

Step 33. When the copying is complete (it may take several minutes), close all windows and shut down the Windows 98.



Step 34. Disconnect the D: drive you made in steps 8-11 by opening the settings window, choosing D Drive in the left pane, and choosing "None" in the D Drive Settings.

PC Settings for "Win98 with Office"				
Current PC Settings		🖴 D Drive Settings		
🔒 PC Name	"Win98 with Office"	Q None		
🍘 Processor	MMX Disabled	Hard Drive Image		
📟 PC Memory	64 MB			
🚍 C Drive	Expanded Win98 test	🛱 New Windows 98 for VPC 4.0		
🚍 D Drive	New Windows 98 for VPC 4.0	Select		
🗎 E Drive	None			
🙆 CD-ROM	Booting Disabled			
🖹 Floppy	Booting Disabled	The D Drive is the PC's secondary hard drive. It is used to hold additional information. Many PC's		
🧃 Shared Folders	Not Installed	do not have a D drive, and it is not necessary to		
🕀 Mouse	Shift-click	select one.		
📟 Keyboard	Keys Not Assigned	New drive images can be created with the		
🚌 COM1 Port	None	VIRTUAI DISK ASSISTANT.		
📭 COM2 Port	None			
« -≫ Networking	Enabled (Shared IP)			
•🐳 USB	No devices in use	Cancel OK		

Step 35. You'll now need to create a new PC. This new PC will use the new drive you just created. From the Virtual PC Window menu, choose the PC List.

	Default Saved	Settings
Connectix	My Win98 Not Running	Delete Shut Down
	PC DOS Running	
Connectix	Test Not Running	A

Step 36. From the PC List, click New to create a new virtual machine and name the PC.

PC Setup Assistant	======
PC Name	
This assistant will guide you through the process of select settings for your new PC. Please enter the name for your new PC and click the right to continue. The PC name typically indicates its hardware	ing the arrow or
software configuration.	
New PC Name: New PC	Cancel
Click the right arrow to continue.	
K	

Step 37. Choose the "Guide Me" option and click the right arrow to continue.

PC Setup Assistant	
Configuration Options	-
The assistant can guide you in creating your new PC. It will ask you questions and create a PC optimized for your needs. If you prefer, you may create a default PC and edit the settings manually or you may duplicate an existing PC.	
(If you are unsure, select the "Guide Me" option.)	
How would you like to configure your PC?	
🖲 Guide Me	
🔘 Create a default PC	
O Duplicate an existing PC	
Click the right arrow to continue.	
м	4 2 ₽

Step 38. Set the desired memory setting for the PC. (64MB is the default and is optimal for Windows 98.)

PC Setup Assistant 📃 🗄
Memory Settings
To increase performance and run more Windows applications,
default setting to leave more memory allocated to this PC. Keep the
The default memory allocation is 64 MB.
Do you want to adjust this PC's memory allocation?
No
O Yes
Choose your memory setting, then click the right arrow to continue.
K 4 3 D

Step 39. For C: Drive Options, choose "Select an existing drive image."

PC Setup Assistant	
C Drive Options	1
The primary drive (Drive C) holds the operating system, programs, and data. You can either select an existing drive or create a new drive.	
Select an existing drive image	
🔘 Create a new drive image	
Select an option and click the right arrow to proceed.	
М	

Step 40. Click "Select Disk" and locate the new drive image you created in steps 8-11.

	PC Setup Assista	ant
Select Drive C		
To select a floppy o Disk" button or dra below.	r hard drive image, click o g an image file from the Fi	in the "Select inder to the box
Selected Disk:	🐴 New Windows 98 for V	/PC 4.0
		Select Disk
Click on the right arro	w to continue.	
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Step 41. Complete the PC Setup Assistant by choosing from the remaining options for modem and PDA. Click "Start Up" at the last panel of the Setup Assistant.

PC Setup Assistant	
Setup Complete	
The Setup Assistant is done creating your PC.	
Click "Done" to continue or "Start Up" to start the PC.	
Start Up Done	ן
Click the left arrow to go back and make changes.	
K 4 12	⊳

Your system should now be transferred and running on a new dynamically expanding drive image. Once the system has fully booted, it is recommended that you run ScanDisk and Disk Defragmenter from the Start/Programs/Accessories/System Tools menu in Windows.

Your system should now be fully functional and running on the new drive. It is strongly recommended that you save your previous drive as a backup.