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Software simplicité technologie

° Technical Informations

° Tools Administration OS

° Source code application

Physical to Image to Virtual (P2I2V)

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Introduction

The P2I2V (Physical to Image 2 Virtual) was created to simplify the migration of a physically server to a VMWare Virtual Machine on an ESX Server 2 or 3.

We have created a tool that is free based from the “BartPE” environment and the Windows® XP/2003 Server.

This tool is provide to simply migration from the physical server based on platform Windows® 2000/2003 to a virtual infrastructure based on system VMWare® ESX or GSX.

Tested on :

ESX 2.5.2
ESX 3

Developers :

Cereal

Authors :

Cereal
Wago

Software Required :

Windows® Server 2003 CD-ROM with Service Pack 1 or later or Windows® XP Professional with Service Pack 2 or later
Symantec Norton Ghost 8.3 32bit.

Changes History :

1.0.5

Update the HAL for multiple or single processor during the setup step.

Create a log file with the result in [%SystemDrive%\LOGS\HAL_UPDATE\]

1.0.2

Remove a major bug, after the migration of the server when you want connect the server with Remote Desktop, you receive the error message “The Server Has Ended The Remote Connection”.

http://www.simple-tech.info/article_read.asp?item=17

1.0.1

Add support for ESX 3 (symmpi.sys), driver and .reg keys

1.0.0

First version of P2I2V

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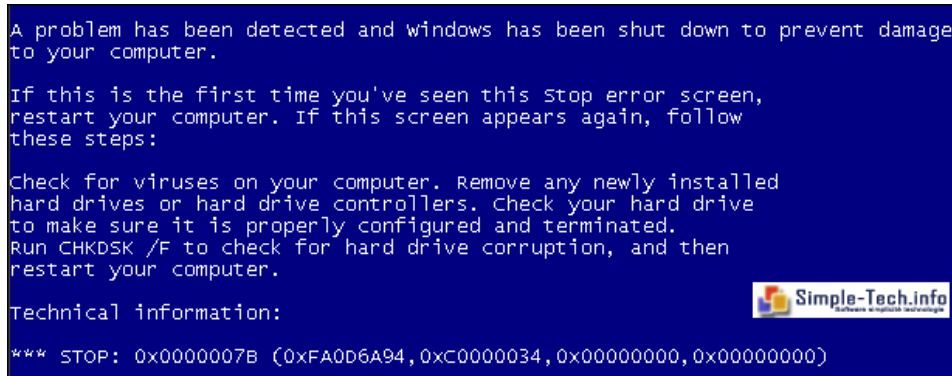
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CONTACTS

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The P2I2V allow you to

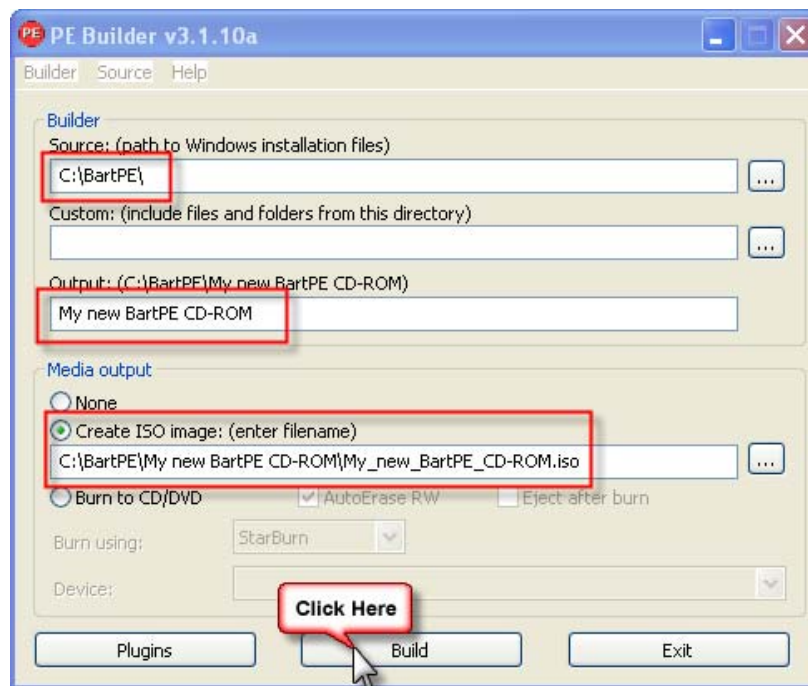
1. BOOT on “Bart's Preinstalled Environment (BartPE)” based on a Windows® PE environment.
<http://www.nu2.nu/pebuilder/>
2. Add support of WSH, VBS, WMI, ADO to the Windows® PE environment.
3. Load the network and connect network drive in a Windows® PE environment with the tool “PE Network Configurator”
<http://www.geocities.com/pierremounir/>
4. Create and restore a image of the source partition with a “Imaging Tool” like “Symantec Norton Ghost 32 v8.x” or “Drive SnapShot”
<http://www.symantec.com>
<http://www.drivesnapshot.de/en/home.htm>
5. Mount dynamically the restored partition in the Windows® PE Environment without reboot.
6. Auto repair the “Master Boot Record” with the free “MBR Wizard” after the restoration of the image files without reboot.
<http://www.geocities.com/mbrwizard/>
7. Inject the VMSCSI® Driver to the future VMachine® to be able to avoid blue screen of death after the first reboot.



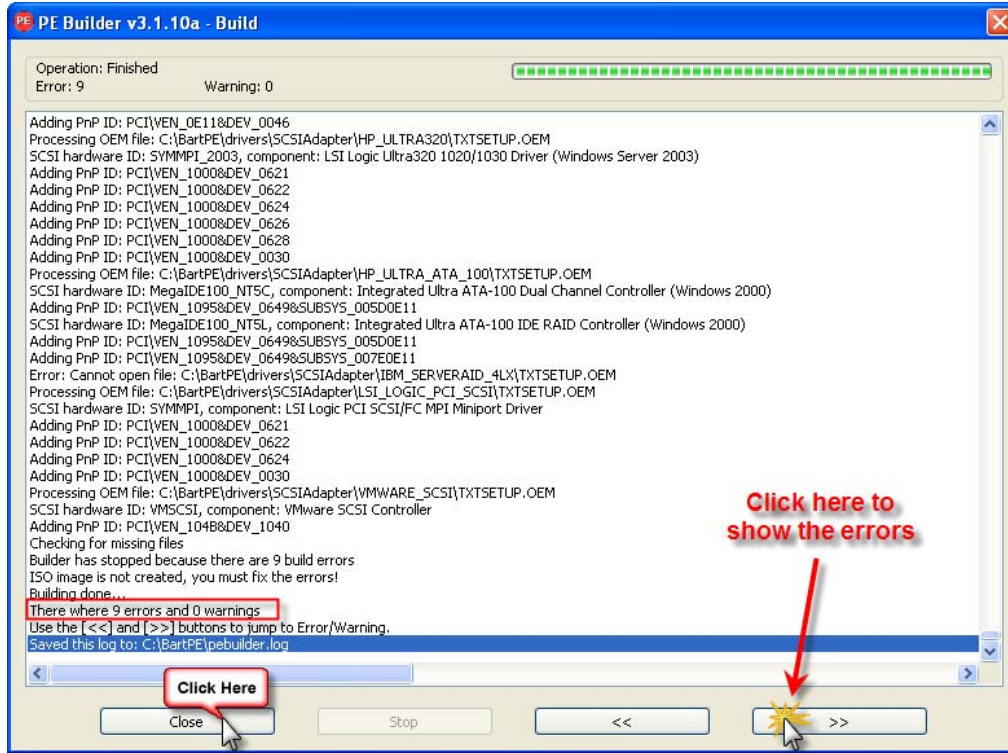
8. After the first reboot of the VMachine® the “P2I2V Tool” provide those actions :
 - Enable the autologon on the VMachine® with username “Administrator” and password “toblerone”
 - Remove old drivers with the free tool “Microsoft® Devcon”.
<http://www.microsoft.com>
 - Unattended installation of the “VMWare® Tools”.
 - Set the screen resolution to 1024x768 with the free tool “MultiRES”.
<http://www.entechtaiwan.com/util/multires.shtm>
 - Uninstall old programs step1 from the “VMachine®”.
 - Uninstall old programs step 2 from the “VMachine®”.
 - Disable the autologon.
 - Remove all old drivers with “Microsoft® DevCON”.

Create a “Bart's Preinstalled Environment (BartPE)” based on Windows® XP/2003 CD-ROM

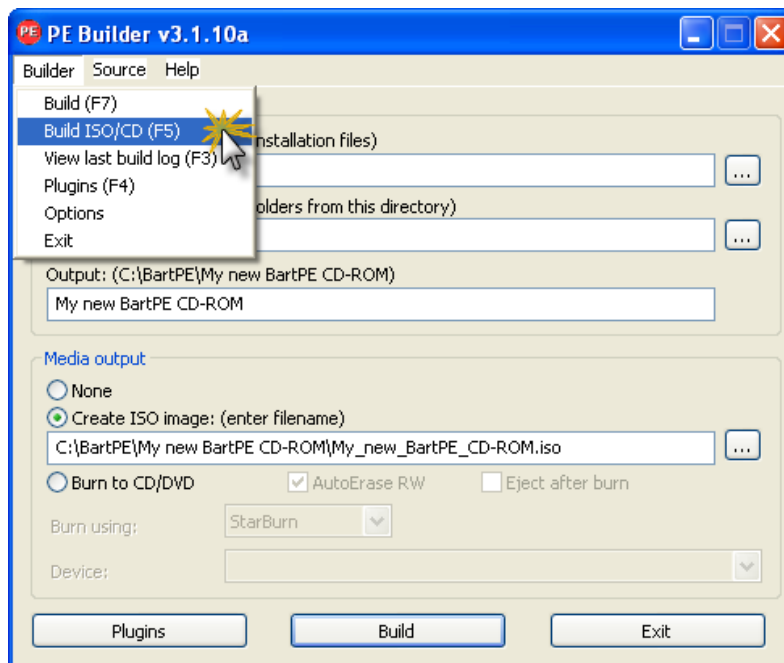
- Download “Bart's Preinstalled Environment (BartPE)”
- Create a directory named “BartPe” in the “C:\” drive.
- Uncompress the “BartPe” in the “C:\BartPe\” directory.
- Copy the content of the “\i386” directory from the “Windows XP/2003 Server” to the “C:\BartPe\i386” directory.
- Remove the read only attribute to the “C:\BartPe \i386”.
- If you want add support of “Networks Drivers” or “SCSI/SATA” drivers see [“Add more network or SCSI drivers to BartPe”](#) section.
- Execute the “PEBUILDER.EXE” tool.
- Feel the text box.



- Check if errors are occurred.



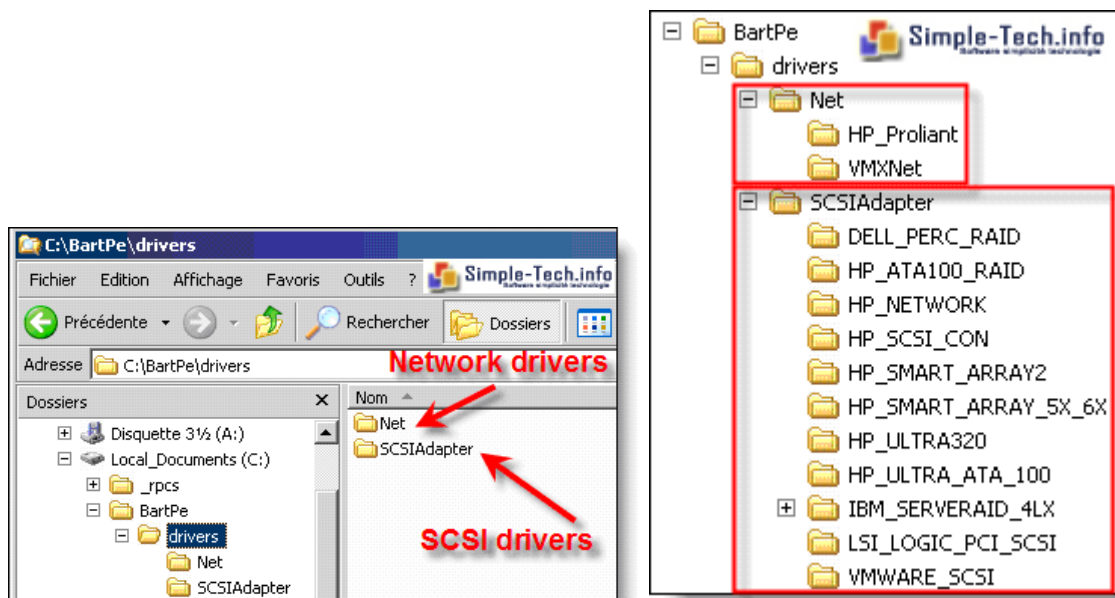
- Use menu “Builder” and use option “Build ISO/CD” or press “F5” to create the ISO file for the boot CDROM.



- Open and edit the .ISO file with an editor like “MagicISO”
<http://www.magiciso.com/>.

Add more “SCSI/SATA” or “Network Drivers” to “BartPe”.

- Create a sub-folder with the name of the driver you want to add in the “BartPe” CDROM (without space)
 - For network drivers create subfolders to “\BartPe\NET”.
 - For SCSI/SATA drivers create subfolders in “\BartPe\SCSIAdapter”.
- Sample:** “C:\BartPe\SCSIAdapter\CPQ3200” for Compaq drivers.
- Copy all files from the original driver disk to the directory “\BartPe\[NET or SCSIAdaper]\[YOUR_DRIVER_DIRECTORY].





If you create the “Bart's Preinstalled Environment (BartPE)” with a Window® 2000 or XP CDROM the SCSI drivers for the support of the “LSI Logic SCSI” and “Bus Logic SCSI” are not included in the default Windows CD-ROM and the “Virtual Machine Disks” are not detected in Windows® PE, follow the next step to add manually the SCSI drivers to Windows® 2000 or XP.

Manually add VMware® SCSI Bus Logic

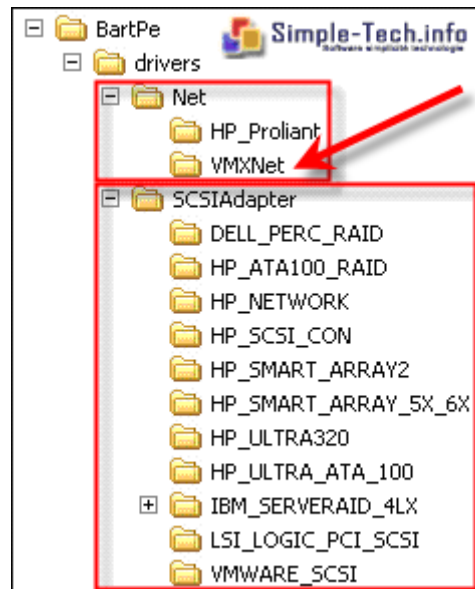
- Create a sub-folder named “VMWARE_SCSI” under the “\BartPE \SCSIAdapter” folder in “BartPE” structure.
- Download the “VMware® SCSI Bus Logic” (vmscsi-x.x.x.x.flp) driver from official VMware® web site.
<http://www.vmware.com>.
- Uncompress the content of the “.flp” file in the “VMWARE_SCSI” directory with a tool like “Winimage”.
<http://www.winimage.com/>
- Rebuild the “BartPE” ISO file.

Manually add LSI Logic (64-bit PCI-X Ultra320 SCSI Single-Channel Host Bus Adapter)

- Create a sub-folder named “LSI_LOGIC_PCI_SCSI” under the “SCSIAdapter” folder in “BartPE” structure.
- Download the ““SCSI LSI Logic”” driver from official LSI® web site.
http://www.lsilogic.com/downloads/downloads.do?product=2095&download_type=driver.
- Uncompress the content of the file in the “LSI_LOGIC_PCI_SCSI” directory.
- Rebuild the “BartPE” ISO file.

Manually add the “VMWare VMXNet Gigabit Network” driver support.

- Create a sub-directory named “VMXNet” under the “\BartPe\NET\” directory from “BartPE” structure.
- Open the ISO file that contains the “VMWare Tools” on the “ESX Server” and extract the files :
 - OEMSETUP.INF
 - VMXNET.SYS
- Copy the extracted files on it.



- Rebuild the “BartPE” ISO file.

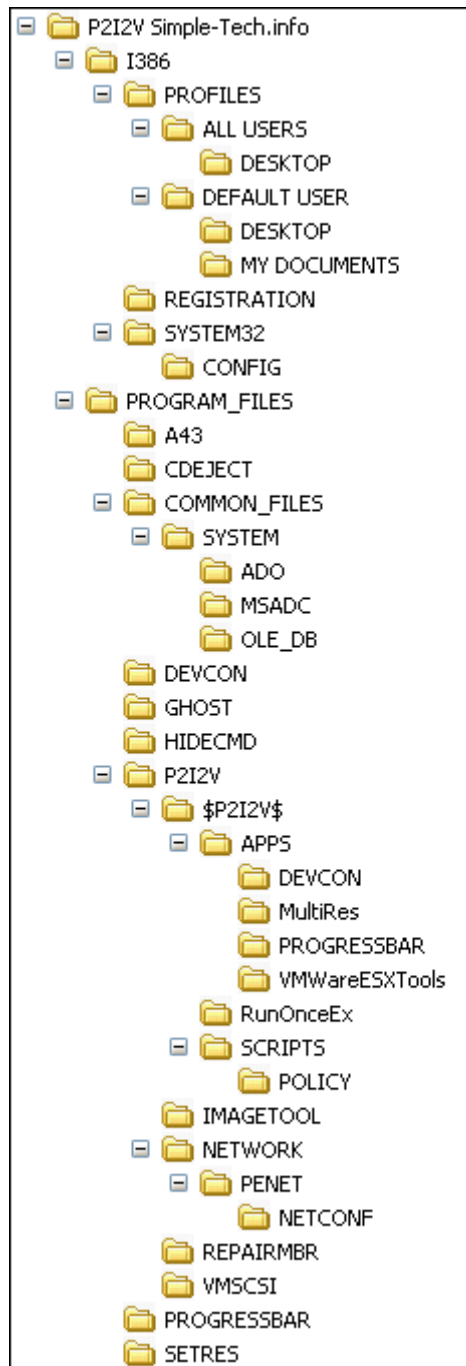
Generate the “P2I2V Simple-Tech.info” CD-ROM

Before you can create the “P2I2V” CD-ROM download the “P2I2V Simple-Tech.info structure” from the official Simple-Tech web site.

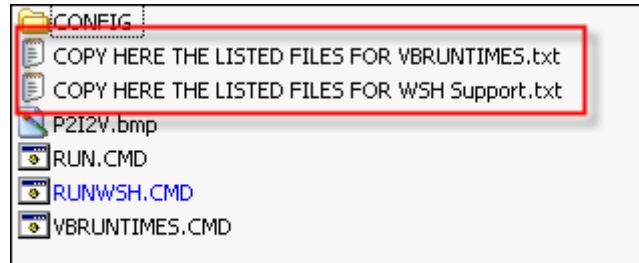
<http://www.simple-tech.info>

Create the structure of the CR-ROM “P2I2V Simple-Tech.info”

- Download the tutorial named *“Tuto WSH-VBS-JS-ADO-MSDAC-OLEDB Support WinPE.pdf”* from the official “Simple-Tech.info” web site to add the support of the “WSH, VBS, JS, ADO, MSDAC, OLEDB” in your Windows® PE.
- Download the tutorial named *“Tuto Add VB Runtimes Support WinPE.pdf”* from the official “Simple-Tech.info” web site to add the support of the “Windows® Visual Basic Runtimes” in your Windows® PE.
- Create manually the directory structure you will see bellow where you want in your hard disk drive or download the “P2I2V Simple-Tech.info.zip” from the official web site that already contains the correct directory structure and explications.



- **In each directory in the “P2I2V” structure, you will find a text file that contains all procedures, simply edit the file in a text editor and follow the instructions.**
 Sample :



- After the creation of all the structure simply copy/paste the content of the directory structure to the “BartPE ISO File” with a tool like “MagicISO”.



You can edit the “ISO File” created by the “BartPE Tool” with a “ISO Editor” like “Win ISO” or “Magic ISO”.

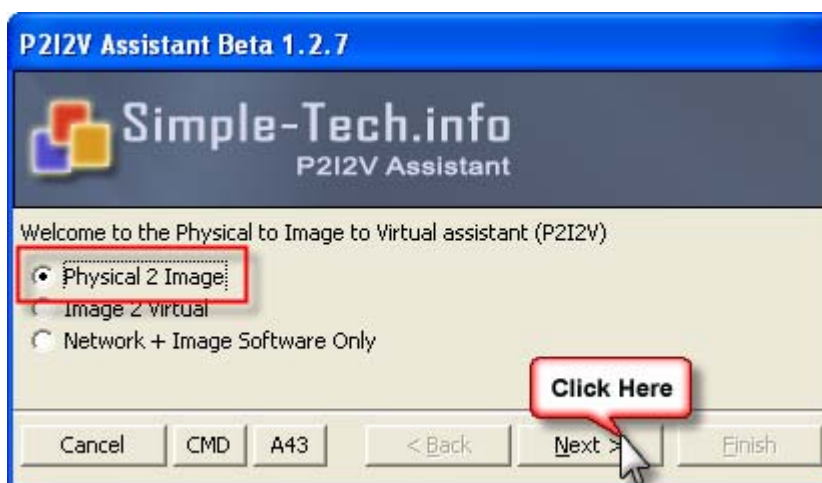


Keep a copy of your Structure in a place safe; you will need it each time you build a new CD-ROM

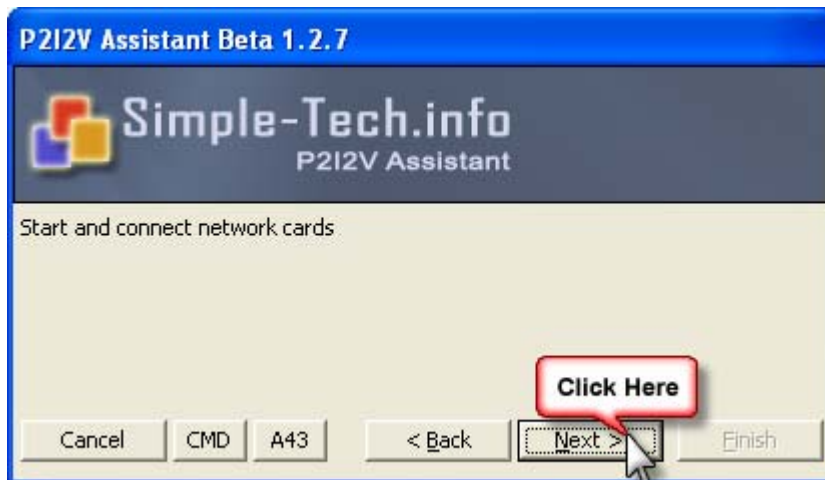
- Take care if u use MagicISO to edit your iso, he don't merge directory, he replace the old one.

Create a image with the “P2I2V Assistant”

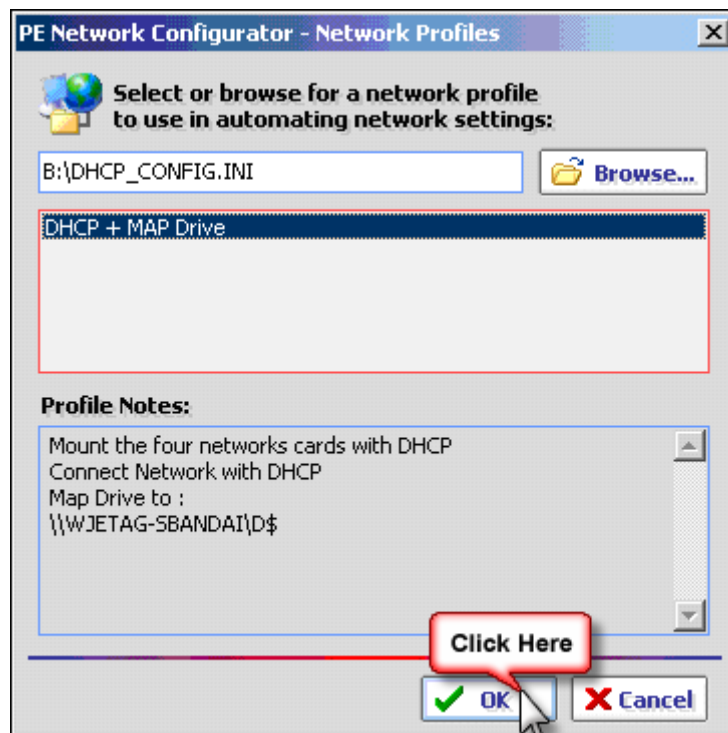
- Boot with the “P2I2V CD-ROM”.
- Select the “Physical 2 Image” option and click “Next”.



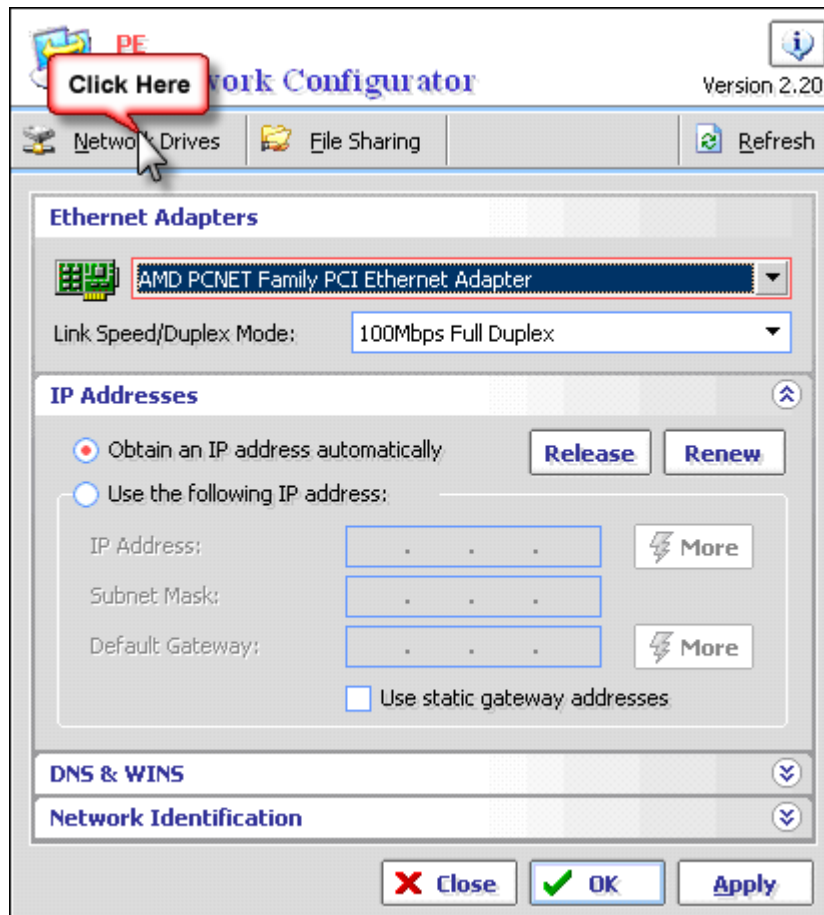
- Click “Next for enable and load the network with the “PE Network Configurator Tool”



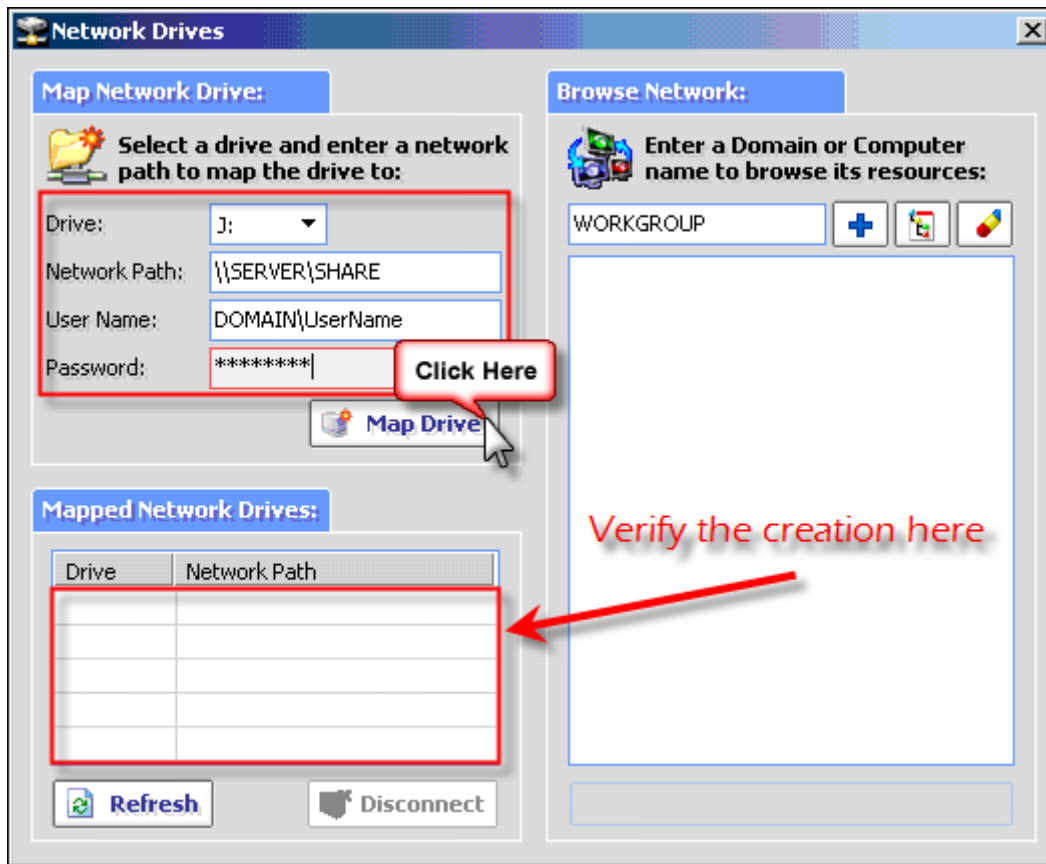
- Select the network profile you have configured or you want to use and click “OK”.



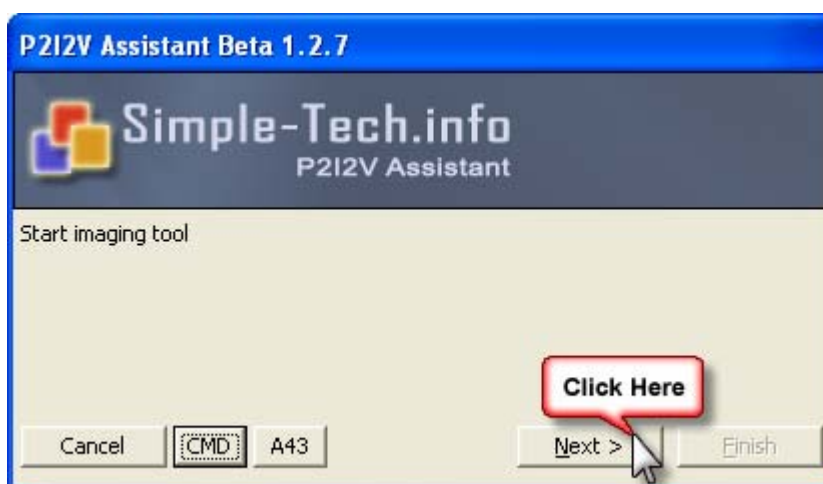
- Configure the networks parameters as your convenience.
- Click on “Network Drive” button to connect a network map.



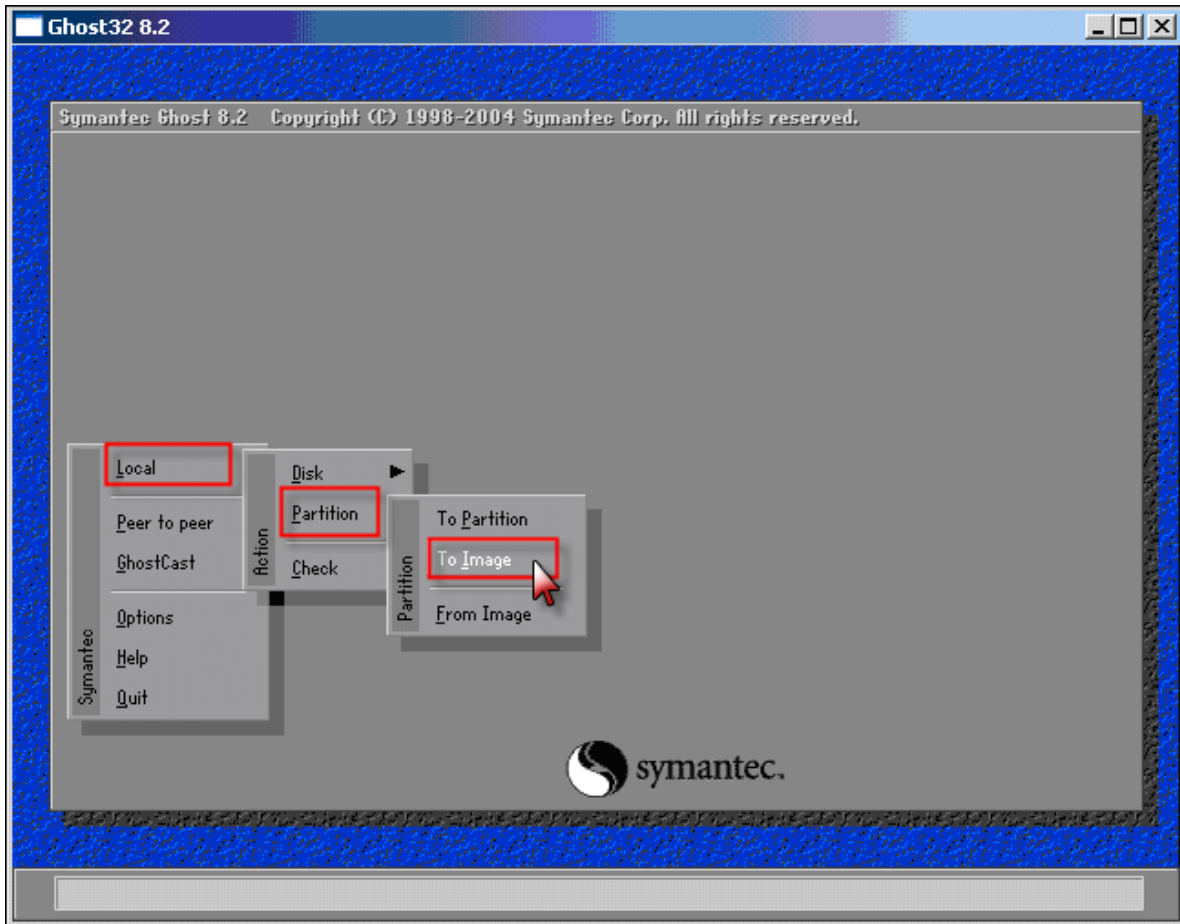
- Connect your network drive.



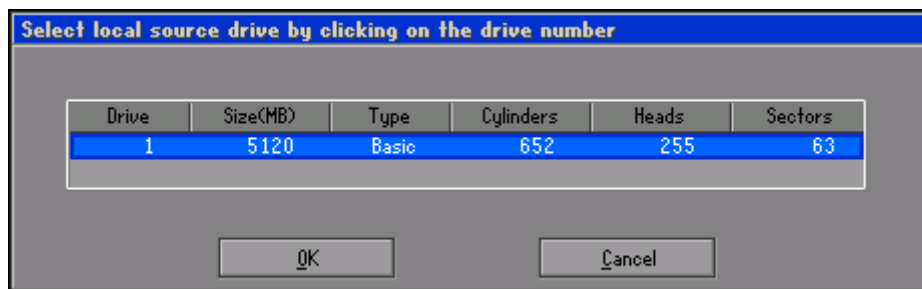
- Click “Next” to start the imaging tool.
- Accept parameters and close the “PE Network Configurator” tool.



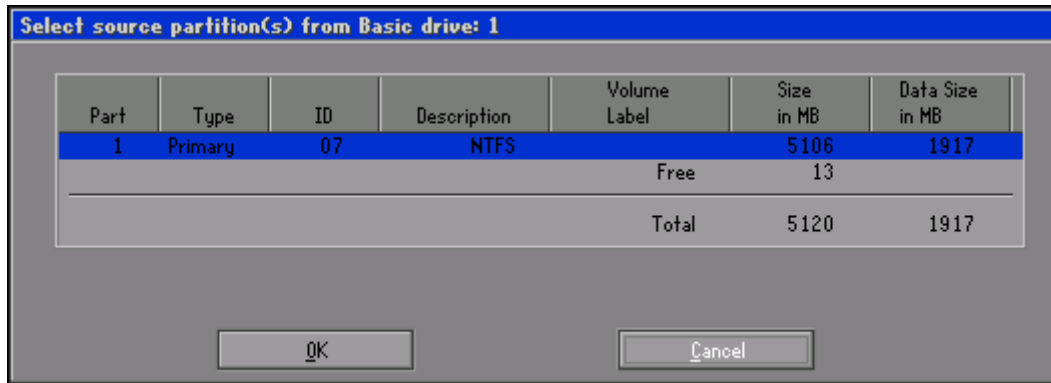
- In our sample we use the “Symantec Norton Ghost 32bit v8.2” for the creation of the image file.
- Select the option “To Image” in the “Ghost32 8.2” menu.



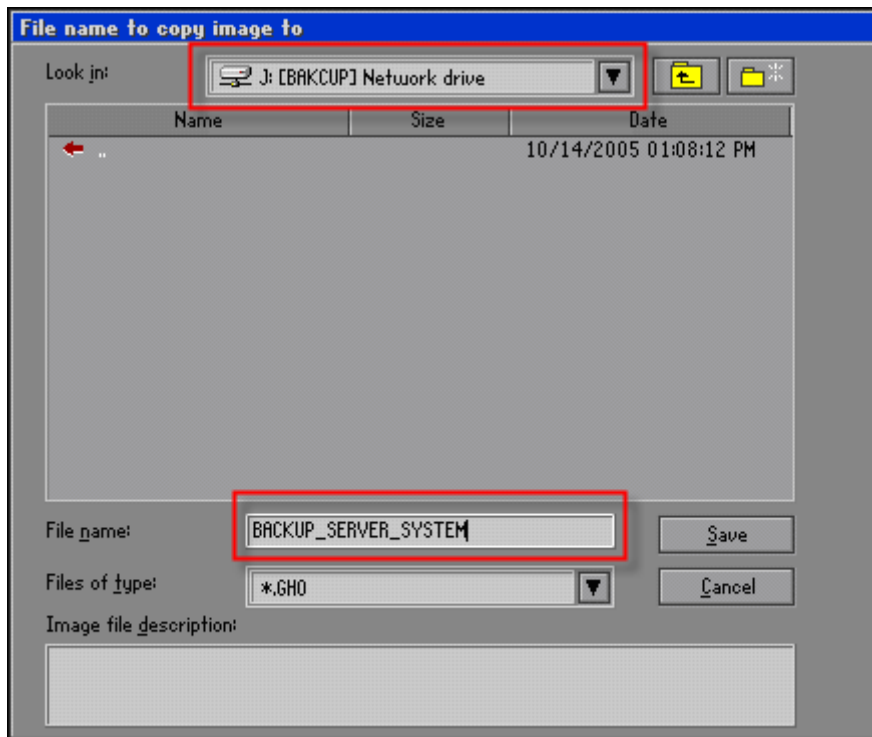
- Select the disk you want to image.



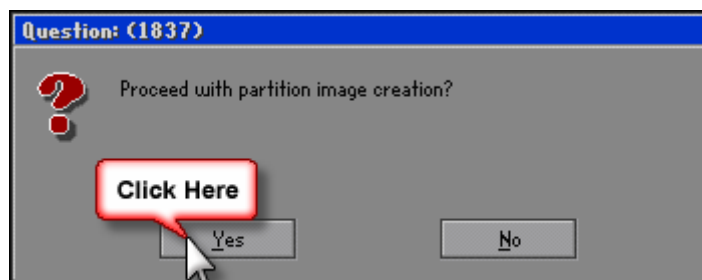
- Select the partition you want to image.



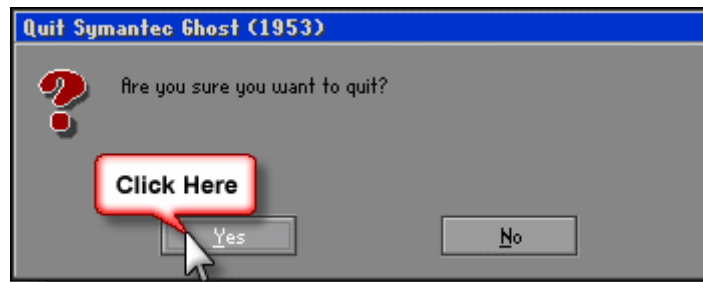
- Browse the map drive and inset a name for the image file.



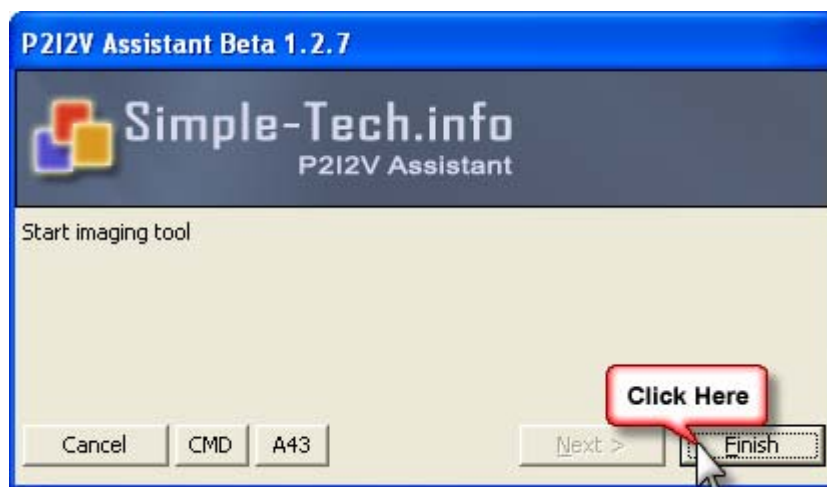
- Proceed to partition creation.



- After the end of the image creation quit the imaging tool.

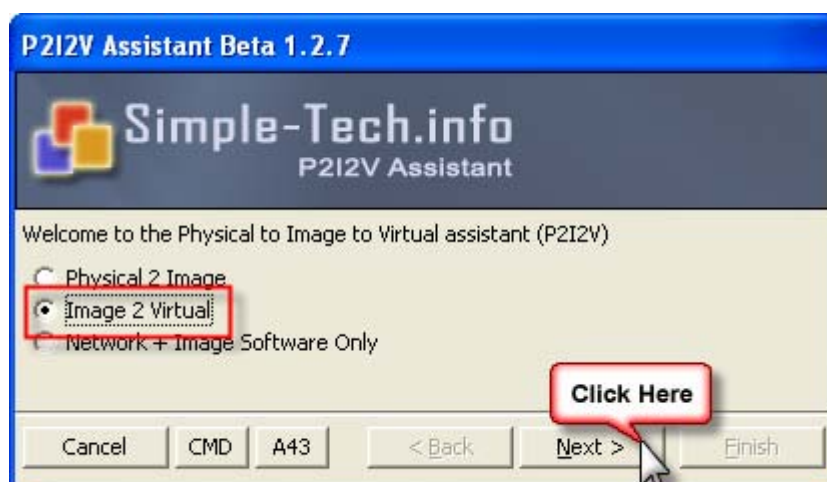


- The “P2I2V Assistant” continues.
- Click “Finish” button to reboot the computer or press the computer shutdown button now.

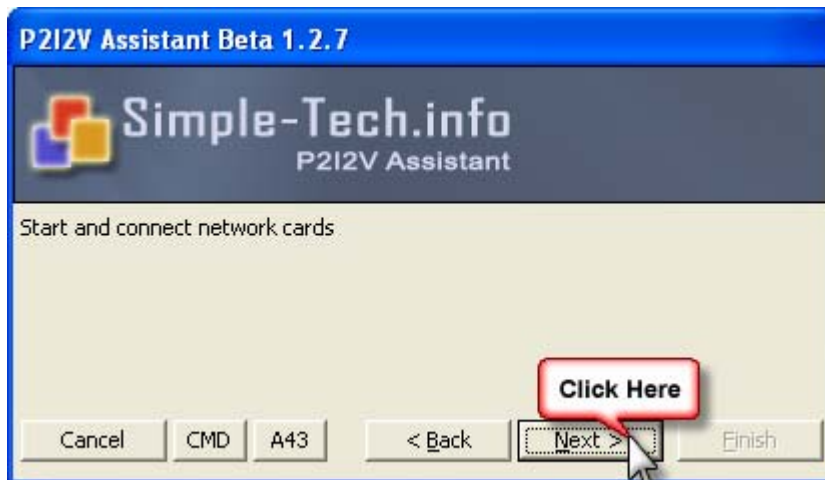


Restore a image with the “P2I2V Assistant”

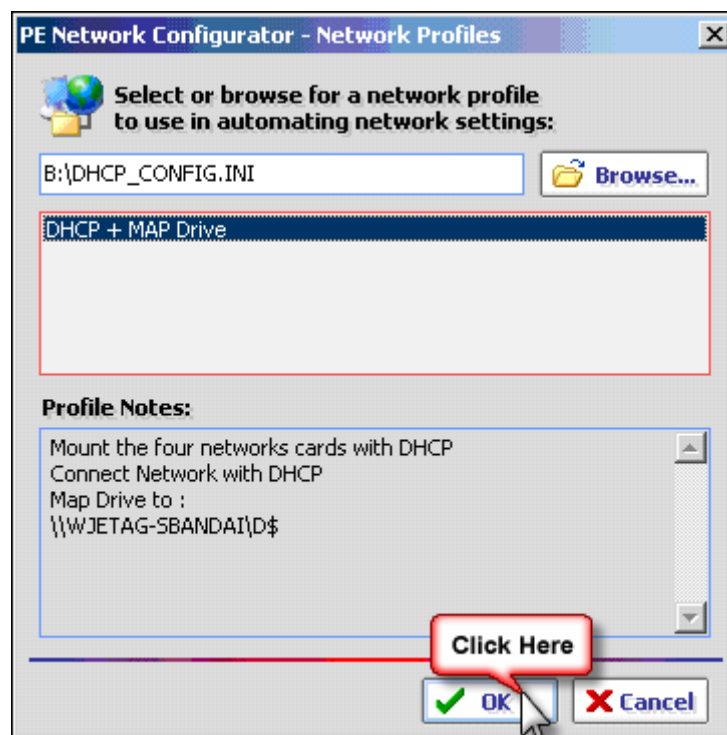
- Boot with the “P2I2V CD-ROM”.
- Select the “Image 2 Virtual” option and click “Next”.



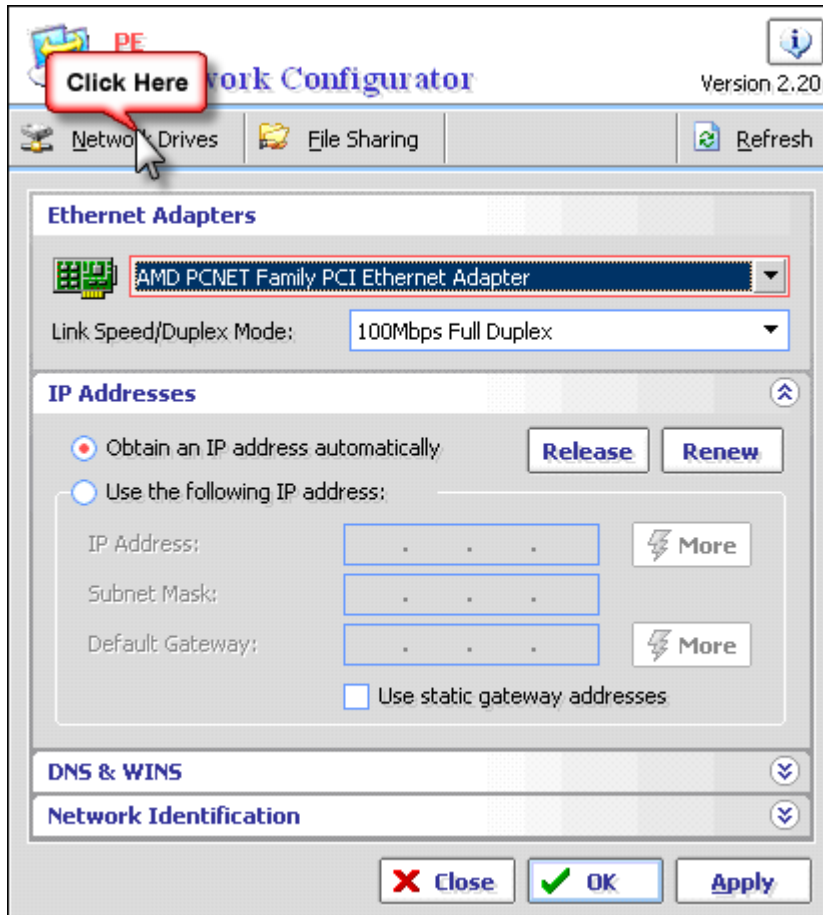
- Click “Next for enable and load the network with the “PE Network Configurator Tool”



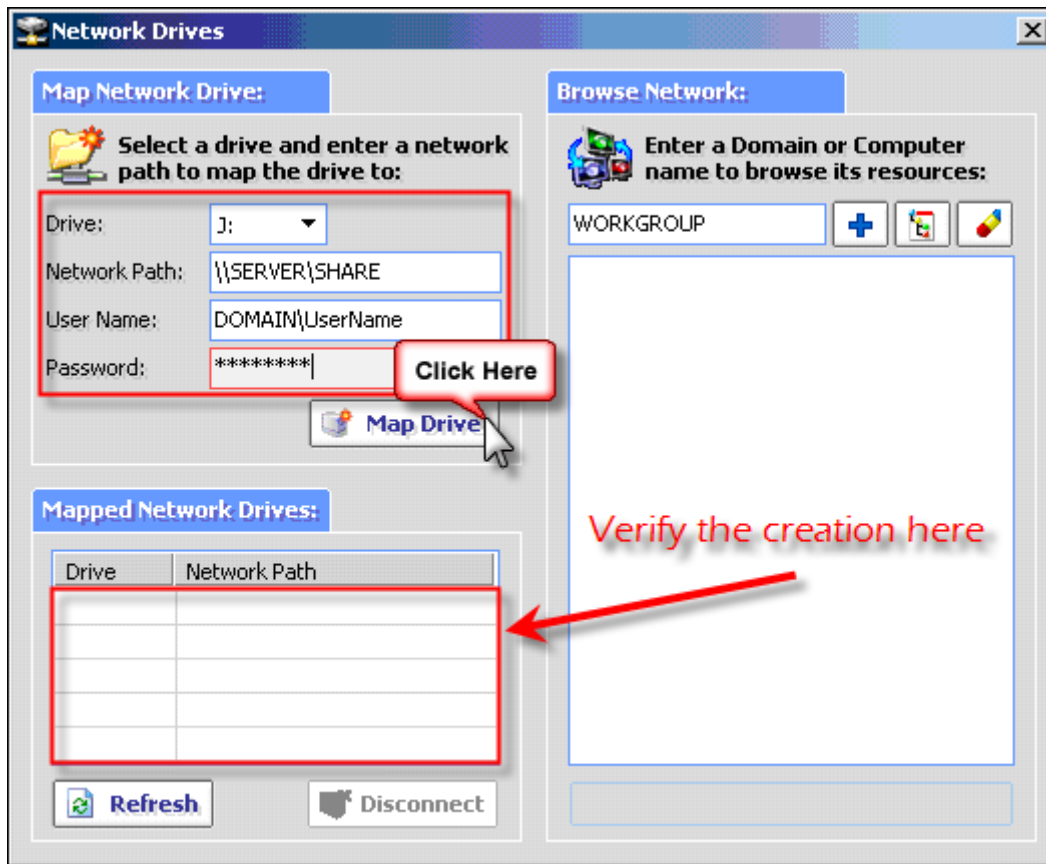
- Select the network profile you have configured or you want to use and click “OK”.



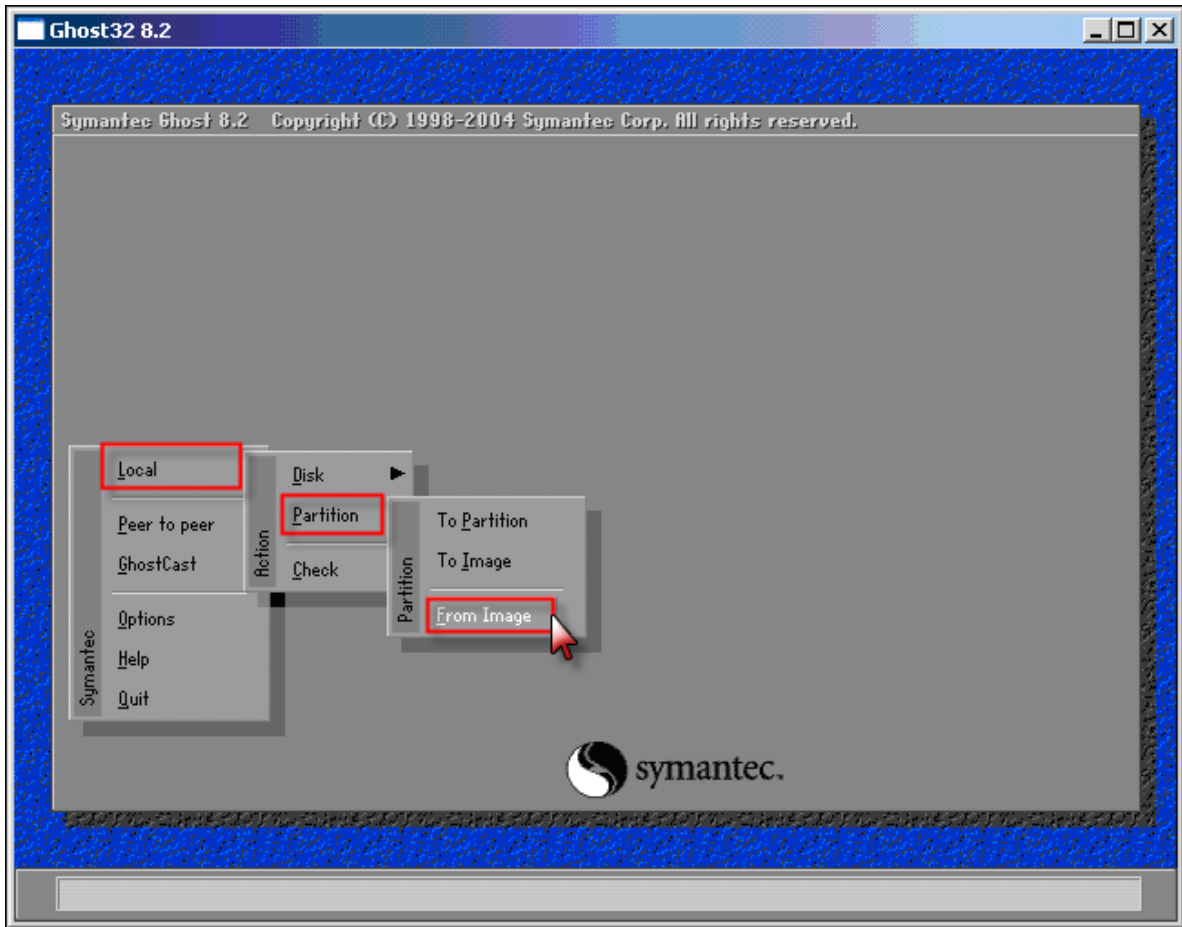
- Configure the networks parameters as your convenience.
- Click on “Network Drive” button to connect a network map.



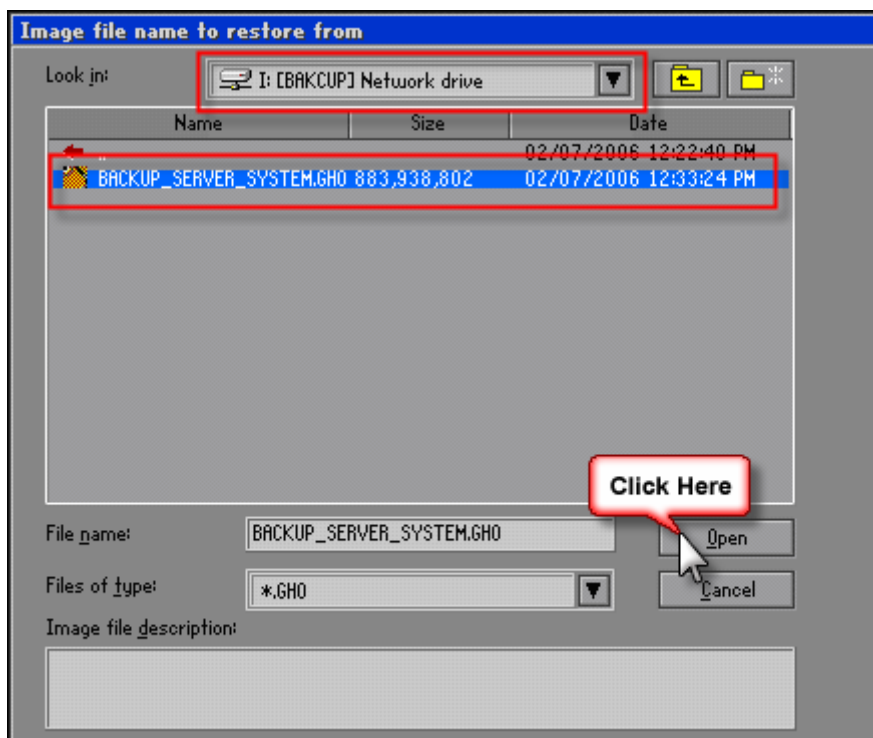
- Connect your network drive.



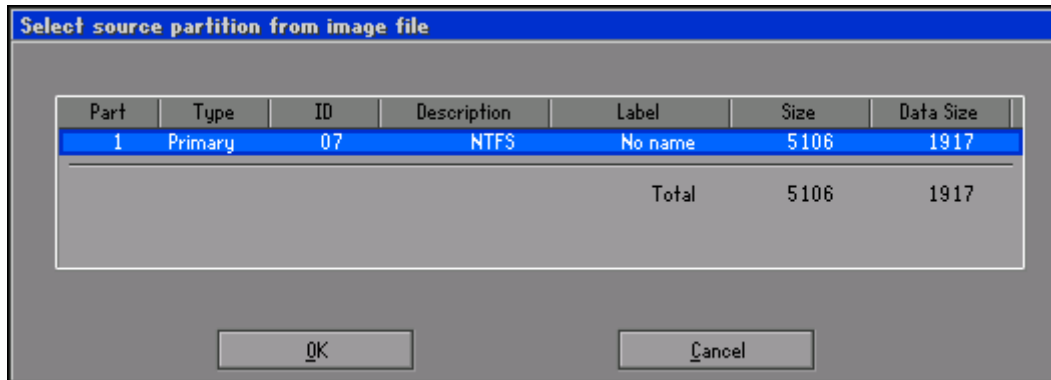
- Accept parameters and close the “PE Network Configurator” tool.
- In our sample we use the “Symantec Norton Ghost 32bit v8.2” for the creation of the image file.
- Select the option “From Image” in the “Ghost32 8.2” menu.



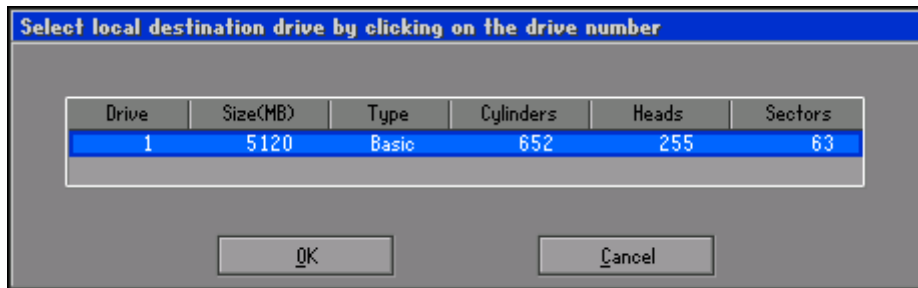
- Browse the network and select the image file you want to restore.



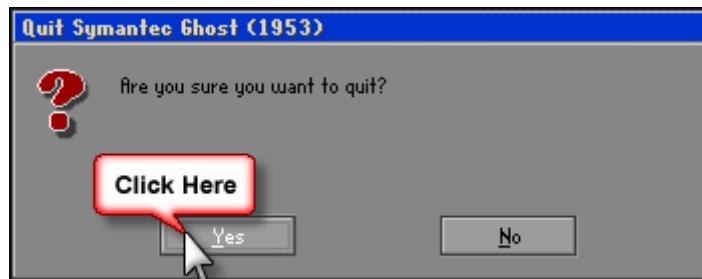
- Select the source partition from the image file.



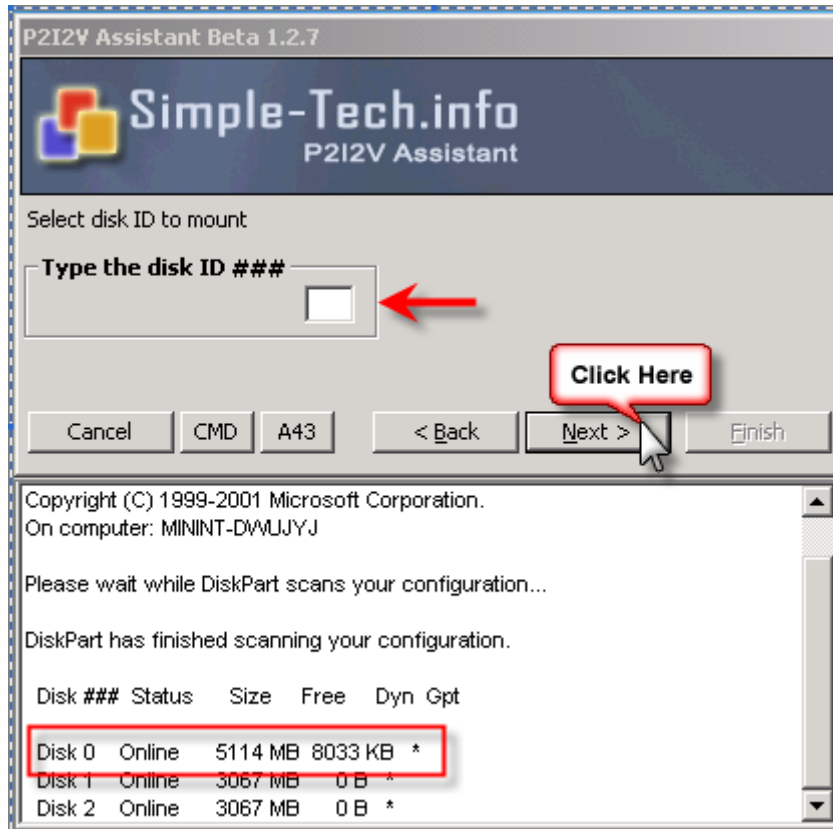
- Select the destination disk where you want restore the image.



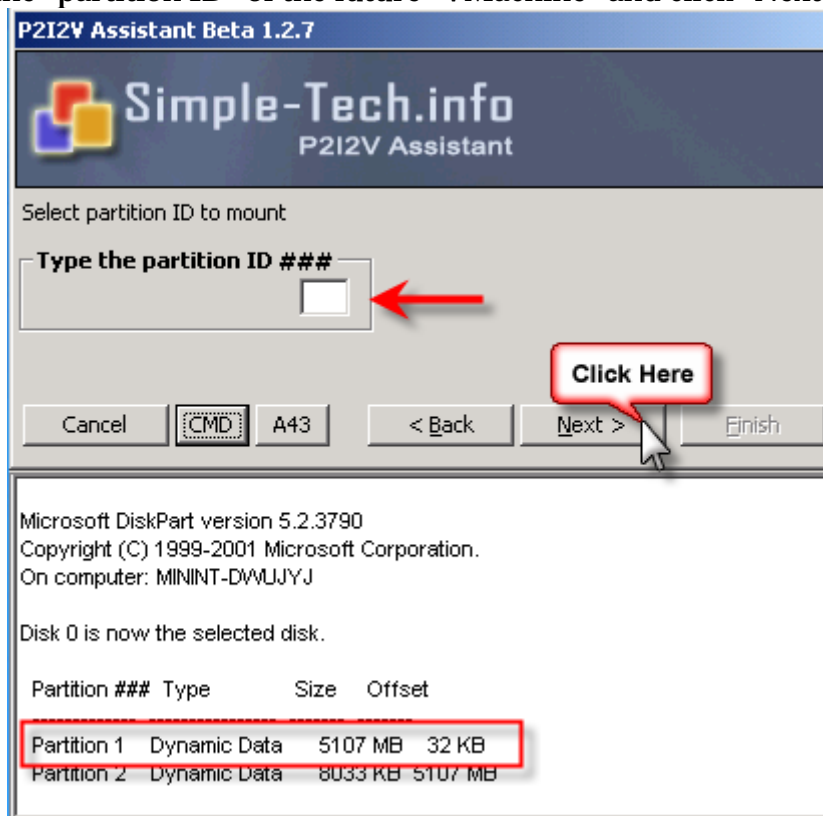
- After the end of the image creation quit the imaging tool.



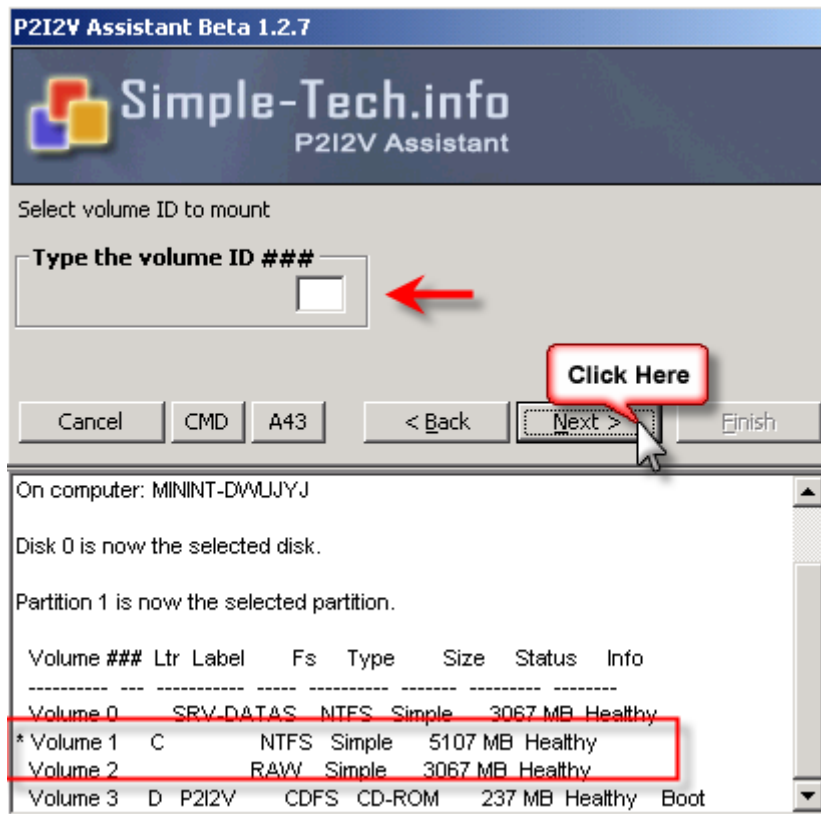
- The "P2I2V Assistant" continues.
- Type the "disk ID" of the future "VMachine" and click "Next" button.



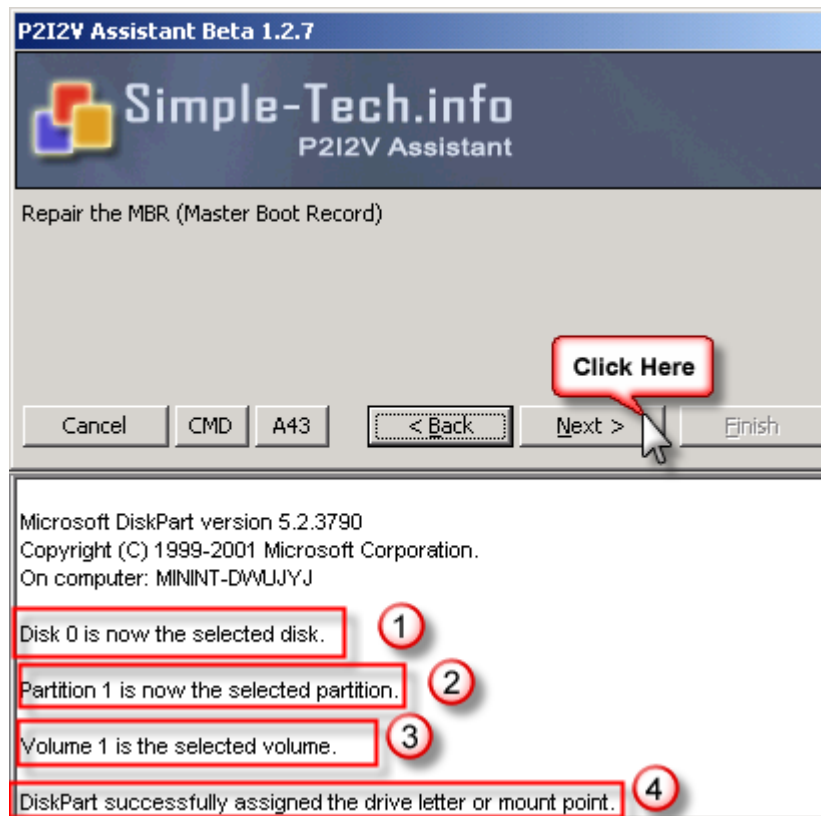
- Type the “partition ID” of the future “VMachine” and click “Next” button.



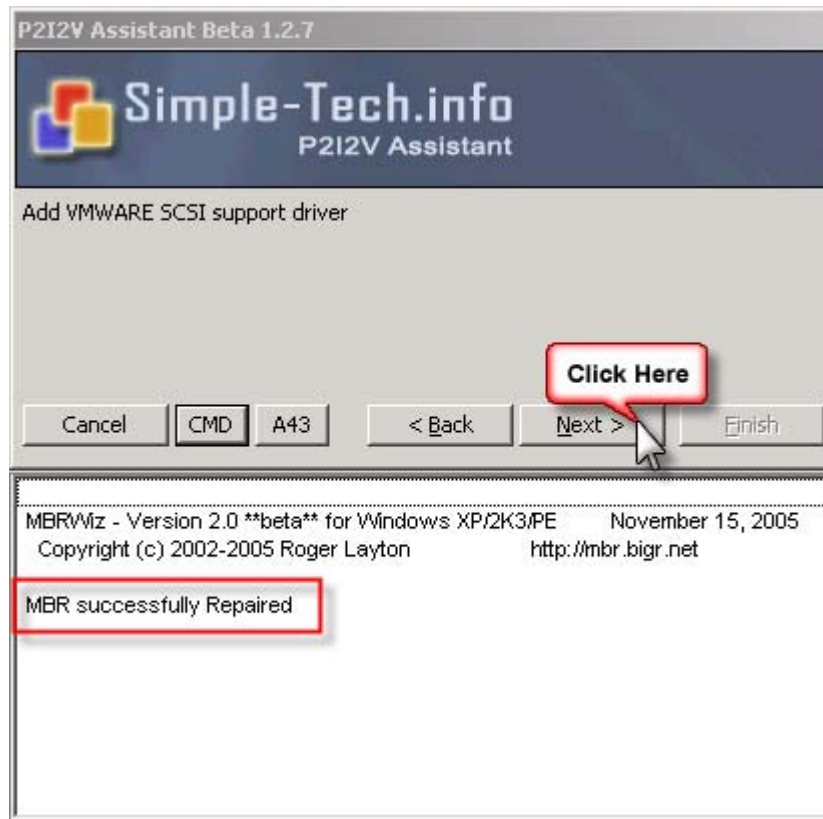
- Type the “volume ID” of the future “VMachine” and click “Next” button.



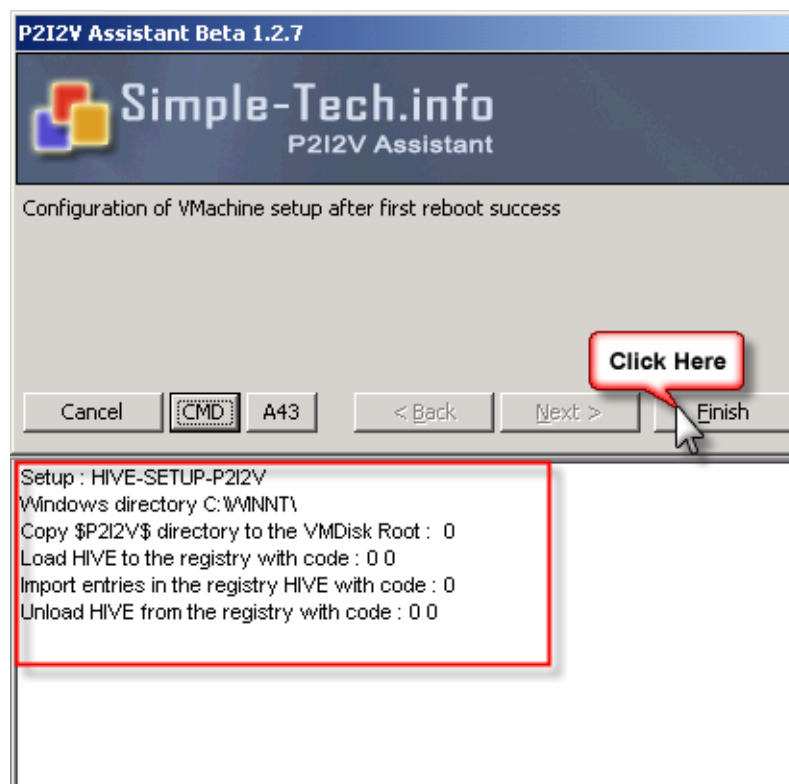
- Verify that the disk is correctly mounted and click “Next” to continue.



- Click “Next” button to repair the “Master Boot Record” of the “VMachine”.

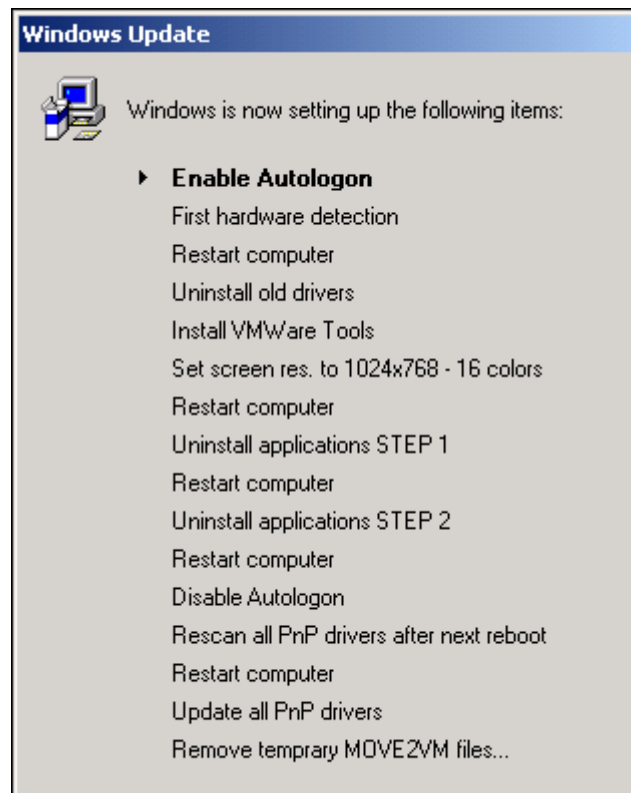


- Verify that the drivers and setup files are correctly merged to the “VMachine” and click “Next” to finish the assistant.



- Click “Finish” button to reboot the computer or press the computer shutdown button now.

Steps proceed after the first reboot on the Virtual Machine
 Check the section “File index” for the name of used scripts.



1. Enable autologon on the computer with :
 Username : Autologon
 Password : toblerone
2. Wait the first hardware detection.
3. Restart computer.
4. Uninstall old drivers script (not used)
5. Install VMWare tools silently.
6. Set screen resolution to 1024x768 with 16 bit colors.
7. Restart computer.
8. Uninstall old applications (STEP1):
 Compaq Software Pack old version.
 Compaq Remote Monitor Service.
 HP Array Configuration Utility
 HP ProLiant Integrated Management Log Viewer.
 HP Insight Management Agents.
 HP Version Control Agent 2.0.
 HP Insight Diagnostics Online Edition for Windows.
 Uninstall DameWare Mini Remote Control.
 Set the service “sysdown” startup mode to disabled.

9. Restart computer.
10. Uninstall old applications (STEP2).
11. Disable autologon.
12. Delete and rescan all PnP drivers.
13. Restart computer.
14. Update all PnP drivers.
15. Reinstall the Remote Desktop Driver Connection
16. Remove temporary files.

Files index

RUN.CMD	Started during the BOOT of CD-ROM.
RUNWSH.CMD	Start the support of WSH-VBS-JS-ADO-MSDAC-OLEDB.
VBRUNTIMES.CMD	Start the support of Visual Basic Runtimes Environment
~\$RMOEMDIR\$.CMD	Delete the P2I2V temporary files after the installation
ProgressBar.exe	Show a progress bar in Windows® 2000/XP/2003
HIVE-SETUP-P2I2V.REG	Contains the registries information's for the P2I2V setup.
AutoLogon.vbs	Enable/Disable the autologon function Username : Autologon Password : toblerone
ChangeScreenResolution.vbs	Change screen resolution
DriversSigningPolicyOff.vbs	Disable the driver signing policy on Windows® 2003 Server
DriversSigningPolicyOn.vbs	Enable the driver signing policy on Windows® 2003 Server
GuiRunOnceFirstLogon.vbs	Load the information's to the VMachine registry hive.
InstallVMWARETools.vbs	Unattended installation of the VMWare Tools
InstallVMWAREToolsBatch.cmd	
PasswordComplexityPolicyOff.vbs	Disable the password complexity on Windows® 2003 Server.
RestartComputer.vbs	Restart the computer
ShowDevMgmtMSC.vbs	Show the Device Management Console
UninstallOldDrivers.vbs	Uninstall old drivers
UninstallOldPrograms.vbs	Uninstall old programs
StartImageTool.VBS	Start the imaging tool
LoadNetwork.VBS	Load network environment in Windows® PE
MAPNetworkDrive.VBS	Map a network drive
PENETCFG.INI	Default configuration file for the PE Net Configurator
DHCP_CONFIG.INI	Configuration file for the DHCP mode in PE Net

RepairMBR.VBS

Configure-2K-2K3-

VMSCSIDriver.VBS

HIVE_VM SCSI.reg

ProgressBarPE.exe

SetRes.exe

DISABLE_COM_LPT.VBS

INSTALL_RDPTSDR.VBS

HALUPDATE.CMD

Configurator

Repair the Master Boot Record

Configure the VMachine to boot with a VMScsi driver

Contains the minimum VMScsi registries driver entries allowing booting on a VMachine.

Show a progress bar in Windows® PE environment

Change the screen resolution

Disable the LPT's and COM's ports in the virtual machine because the Windows check every 1 seconds the presence of a periferic

in the port, to ensure performances disable it

Reinstall Terminal Server Device Redirector

Update the HAL for multiple or single processor during the setup step.