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# Adaptive Restore™ 2010

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*User Guide*

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## Introduction

Paragon Adaptive Restore™ 2010 includes all tools to make any Win2K system (Windows 2000/XP/Server 2003 and Vista/7/Server 2008) bootable on dissimilar hardware. The product comes as an ISO-image of our new WinPE 3.0 based bootable environment. Supporting the latest hardware configurations, it enables to boot most computers by default, and even if you've got some specific hardware aboard, it allows adding drivers for it with minimal effort. And it doesn't require installation to help you in the process.

In this guide you will find the answers to many of the technical questions, which might arise while using the program.



**Our company is constantly releasing new versions and updates to its software, that's why images shown in this manual may be different from what you see on your screen.**

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## What's New in Adaptive Restore 2010

- [The updated P2P Adjust OS Wizard](#) to successfully start up a Win2K+ physical system on a different hardware platform (P2P) by allowing injection of all required drivers and the other actions crucial for this type of migration. Including the third generation of Paragon's Adaptive Restore™ technology, it now can:
  - Analyze all installed drivers inside a target system to report on devices without drivers;
  - Search for and install lacking drivers from the built-in Windows repository;
  - Notify the user about boot critical devices without drivers (HDD/RAID controllers, etc.), automatically prompting to provide a path to a driver repository;
  - Name all devices according to their model description, not some alphanumeric code, which requires additional deciphering;
  - Determine and install drivers not only for boot critical devices, but for physically connected NICs as well.
- [WinPE 3.0 based bootable environment](#) to enjoy support of a wider range of hardware configurations with the option to add drivers for specific hardware on-the-fly.
- [The updated Boot Corrector for WinPE](#) that now equals the functionality of the Linux/DOS counterpart.

## Features Overview

This chapter dwells upon key benefits and technical highlights of the product.

### Key Features

Let us list some of the key features:

- [P2P Adjust OS Wizard](#) to successfully start up a Win2K+ physical system on a different hardware platform (P2P) by allowing injection of all required drivers and the other actions crucial for this type of migration.
- [Driver Injector for WinPE](#) to easily add drivers for specific hardware.
- [Boot Corrector](#) to fix most of the system boot problems that can be a result of a human factor, program error or a boot virus activity.
- [Network Configuration Wizard](#) to establish a network connection under WinPE, thus allowing transmission of data on the net.
- [Restore Wizard](#) to restore an entire hard disk or separate partition from a Paragon's backup.

### Supported Technologies

Along with using innovative technologies from outside, Paragon has developed a number of its own original technologies that make its products unique and attractive for customers:

- **Paragon Adaptive Restore™** technology to successfully migrate a Win2K+ physical system to a different hardware platform (P2P).
- **Paragon UFSD™** technology to browse partitions of any file system including hidden and unmounted, modify and copy files and folders, etc.
- **Paragon Restore with Shrink™** technology to restore a backup image to a free block of smaller size taking into account only the amount of actual data of the image.
- **Microsoft Dynamic Disk** (simple, spanned, striped, mirrored, RAID-5) to offer more management flexibility without the partition limitation of basic disks. Dynamic storage can be particularly beneficial for large-scale businesses when dealing with many physical hard disks involving complex setup.
- **GUID Partition Table (GPT)**. It is the next generation of a hard disk partitioning scheme developed to lift restrictions of the old MBR. GPT disks are now supported by Windows Vista/7, Server 2008, Mac OS X and Linux.

### Supported File Systems

- Full read/write access to FAT16/FAT32 partitions.
- Full read/write access to NTFS (Basic and all five types of Dynamic Disks). Compressed NTFS files are also supported.
- Full read/write access to Ext2FS/Ext3FS/Ext4FS.
- Limited read/write access to Apple HFS+ partitions.

## Supported Media

- Support of both MBR and GPT hard disks (up to 1,5 TB tested)
- IDE, SCSI and SATA hard disks
- CD-R, CD-RW, DVD-R, DVD+R, DVD-RW, DVD+RW, DVD-R, DVD+R double layer and also Blu-ray discs
- FireWire (i.e. IEEE1394), USB 1.0, USB 2.0 hard disks
- PC card storage devices (MBR and GPT flash memory, etc.)

## Getting Started

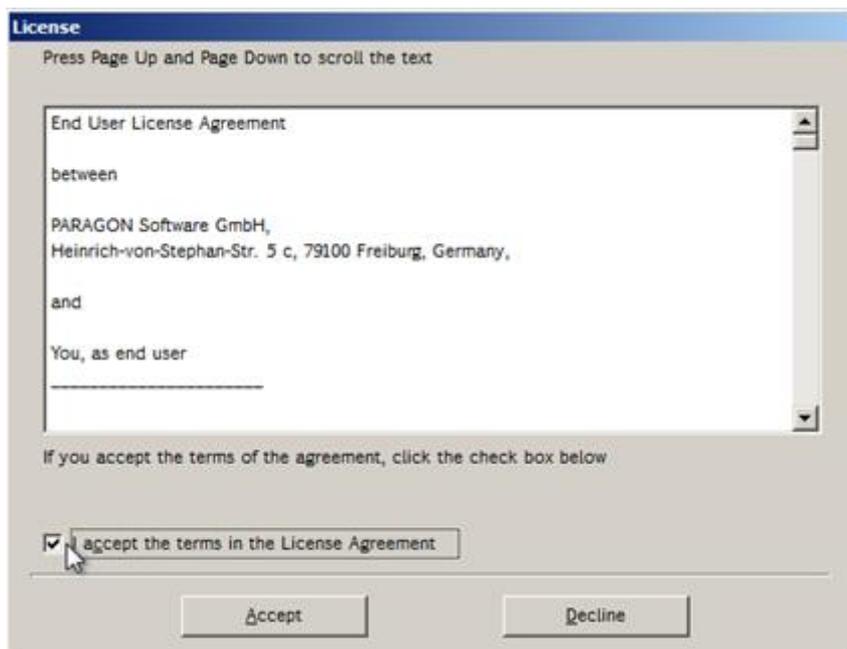
In this chapter you will find all the information necessary to get the product ready to use.

### System Requirements

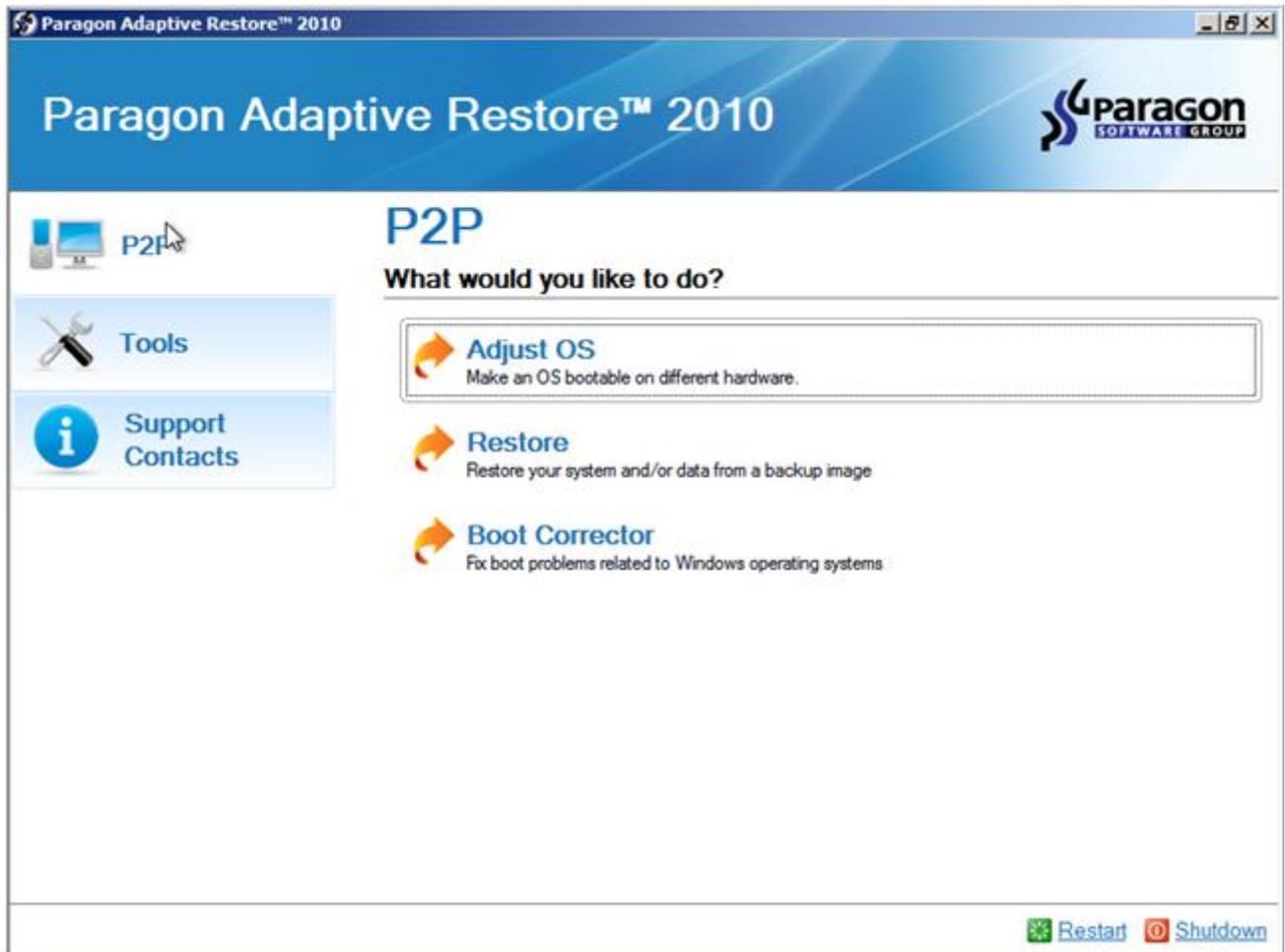
- Intel Pentium III CPU or its equivalent, with 1000 MHz processor clock speed
- At least 512 MB of RAM
- SVGA-compatible monitor
- Mouse (recommended)

### First Start

1. Start up the computer from our WinPE environment, which you can prepare on a CD/DVD disc or a thumb drive. Please make sure the on-board BIOS is set up to boot from CD/USB first.
2. Read Paragon's license agreement and then mark the appropriate checkbox to accept. If you do not agree with any conditions stated there, you won't be able to use the program.



3. Once you accept the agreement, you will see the Universal Application Launcher. In general it enables to run components of the product, load drivers for undefined hardware or establish a network connection.



4. Click on the required operation to start. Hints will help you make the right choice.



Our WinPE 3.0 based environment offers excellent hardware support. However in case it doesn't have a driver for your disk controller, your hard disks will be unavailable. Please consult the [Adding specific drivers](#) scenario to know how to tackle this issue.

## Contacting Paragon Technology GmbH

If you have any questions about the company products, please do not hesitate to contact Paragon Technology GmbH.

Service	Contact
Visit Paragon GmbH web site	<a href="http://www.paragon-software.com">www.paragon-software.com</a>
Registration & updates web-service	<a href="http://www.paragon-software.com/support">www.paragon-software.com/support</a>
Knowledge Base & Technical Support	<a href="http://kb.paragon-software.com">kb.paragon-software.com</a>
Pre-sale information	<a href="mailto:sales@paragon-software.com">sales@paragon-software.com</a>

## About Adaptive Restore Technology

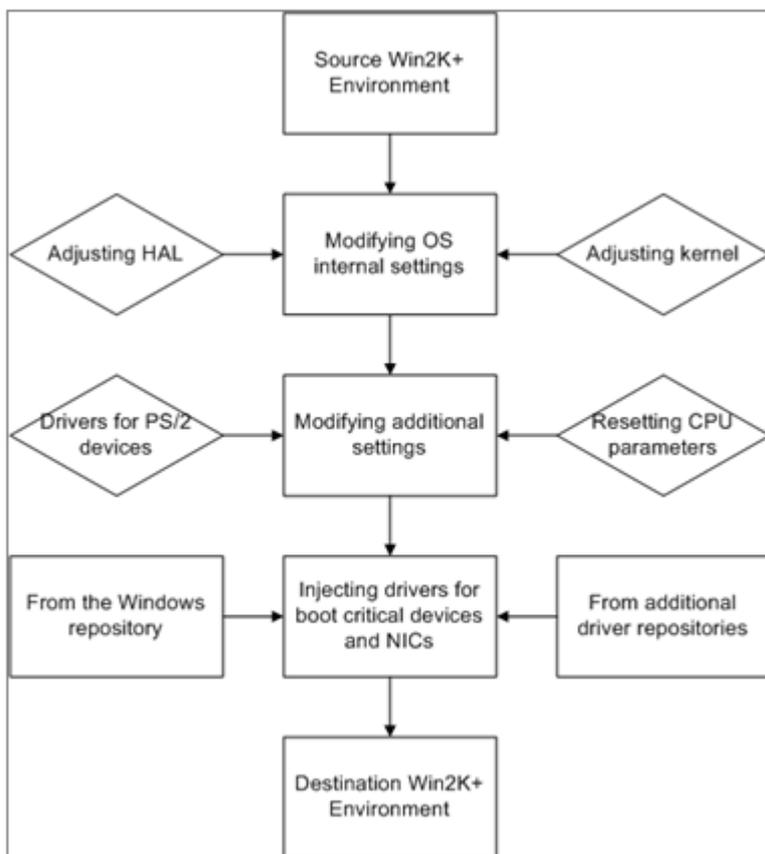
### Technology Background

Windows family operating systems are notorious for their excessive sensibility to hardware, especially when it turns to replacement of such a crucial device as HDD controller or motherboard – actually Windows will most likely fail to boot as a result of this operation.

In 2008 our company came with an exclusive technology called Paragon Adaptive Restore™. Initially aimed at restore of Windows Vista or Server 2008 from a backup to a different hardware configuration, its current realization, available in the P2P Adjust OS Wizard, enables to make any Win2K system (Windows 2000/XP/Server 2003 and Vista/7/Server 2008) bootable on dissimilar hardware by allowing automatic injection of all required drivers and the other actions crucial for this type of migration.

### Technology Concept

Let's take a closer look at how Paragon Adaptive Restore works.



As you see, successful migration of a Win2K system to a different hardware platform involves several actions:

1. **Change of the Windows kernel settings according to the new configuration.** The program detects the given hardware profile and automatically installs the appropriate Windows HAL and kernel.
2. **Installation of drivers for boot critical devices.** The program detects those without drivers and automatically tries to install lacking drivers from the built-in Windows repository. If there's no driver in the repository, it prompts the user to set a path to an additional driver repository, strongly recommending not to proceed until all

drivers for the found boot critical devices are installed. In case drivers for these devices are installed, but disabled, they will be enabled.

3. **Installation of drivers for a PS/2 mouse and keyboard.** This action will only be accomplished for Windows 2000/XP/Server 2003.
4. **Installation of drivers for network cards.** The program detects those without drivers and automatically tries to install lacking drivers from the built-in Windows repository. If there's no driver in the repository, it prompts the user to set a path to an additional driver repository.

These actions guarantee a Win2K system will start up on dissimilar hardware. After the startup, Windows will initiate reconfiguration of all Plug'n'Play devices. It's a standard procedure, so please don't worry and prepare the latest drivers at this step to get the most out of the system.




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**Though all Win2K systems have built-in driver repositories, please be prepared to have additional drivers when dealing with Windows 2000/XP/Server 2003, because for these systems they are very modest.**

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## Technology Application

Let's consider a number of situations when the Adaptive Restore technology can help you out:

- If you need to migrate to a different hardware platform with minimal effort
- If you need to upgrade hardware while keeping all programs and settings intact
- If you need to replace failed hardware and cannot find an exact match for original system specifications

## Known Issues

1. After transferring Microsoft Vista and later versions to different hardware, you will need to re-activate license of the system. It's normal behavior as these systems keep tracking any change of hardware. Re-activation is legally justified in this case, as you transfer your system to another PC.
2. If you've installed several operating systems on one partition, we can only add drivers to the latest version of OS. Microsoft highly recommends that you install an operating system on a separate partition.
3. Please note drivers are not cached during selection. That's why if you select a driver to add to the system, but it's already unavailable during the operation, the program will end the operation with an error.

## Typical Scenarios

This chapter lists a number of the most frequently used scenarios that may be accomplished with the program. You can find here useful recommendations and descriptions of operations.

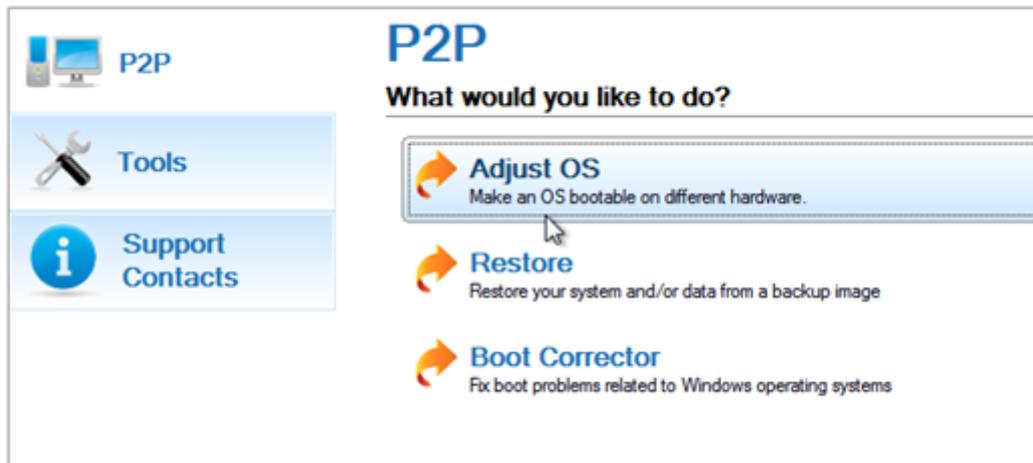
### Making System Bootable on Different Hardware

Before you start, please make sure the following conditions are met:

- You've got drivers for the new hardware ready to use, not zipped or in .exe files.
- Your OS is unrolled on the new computer, not in a backup image.

To make a Win2K+ physical system bootable on different hardware, please do the following:

1. [Start up the computer from our WinPE media.](#)
2. Launch the **P2P Adjust OS Wizard**.



Our WinPE 3.0 based environment offers excellent hardware support. However in case it doesn't have a driver for your disk controller, your hard disks will be unavailable. Please consult the [Adding specific drivers](#) scenario to know how to tackle this issue.

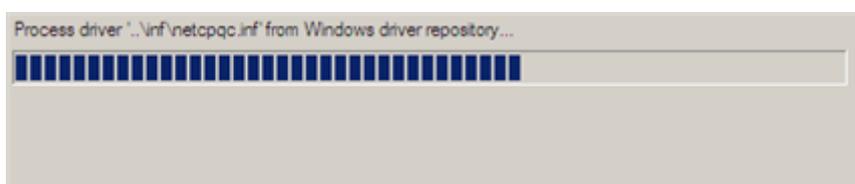
3. On the Wizard's Welcome page, click the Next button.
4. From the list of all found Win2K+ systems (if several) select one you need to adjust to the new hardware. If you're willing to adjust them all, just re-launch this wizard for each.



5. There are two execution modes to choose from: **fully automatic** and **advance**. Below we will go set-by-step through the automatic scenario to show the whole process, and then take a closer look at [specifics of the advance scenario](#).



6. Select **Adjust the OS to the new hardware automatically**.
7. The wizard will automatically accomplish all the necessary actions.

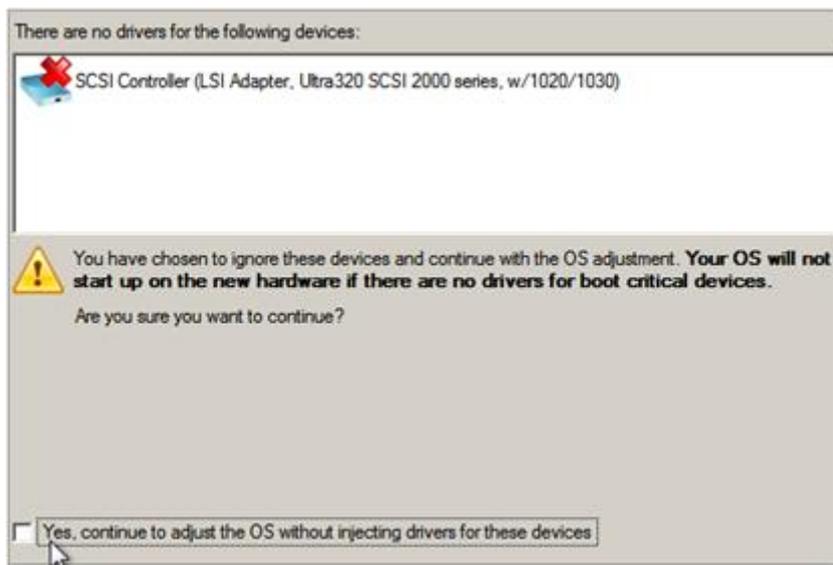


8. The only action that might be required from your side is to set a path to an additional driver repository in case the wizard has failed to find drivers for some boot critical devices in the built-in Windows repository. Generally together with new hardware you get its drivers for different operating systems on removable media (mostly CD or DVD). By collecting all these drivers in one folder you can let the wizard automatically pick and install only those required for your OS. Select **Search for drivers in a specific folder**.

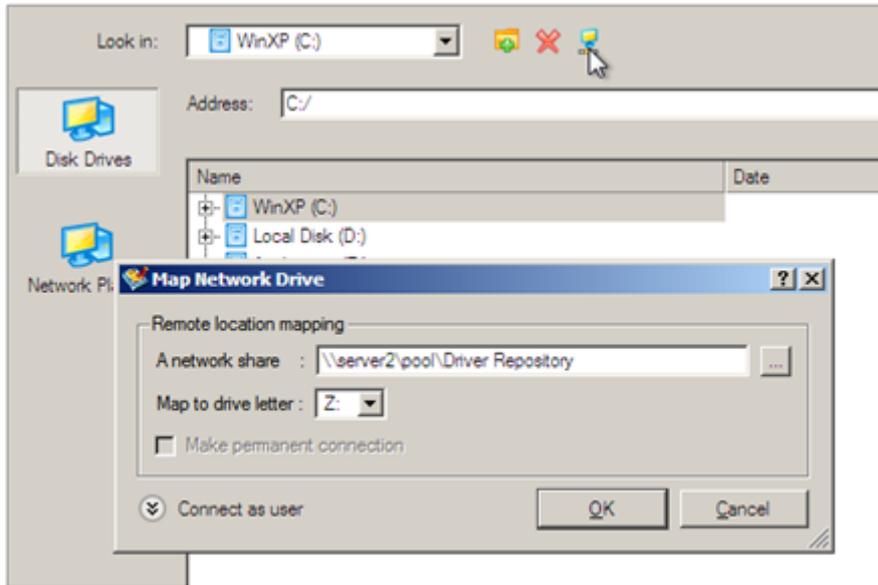
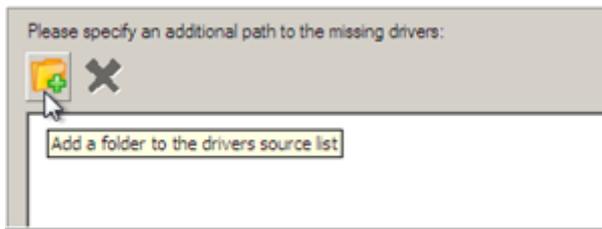


Click on the link at the bottom of the page to see what boot critical devices have no drivers. The wizard names all devices according to their model description, not some alphanumeric code, which is very convenient.

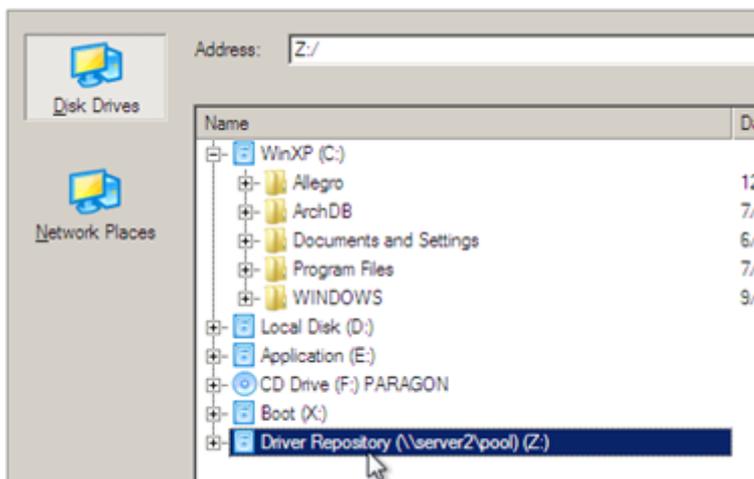
9. Though you've got the option to continue without injecting missing drivers for boot critical devices (The **Ignore all missing drivers** option), we strongly recommend you not to do it. Otherwise we cannot guarantee your Windows will start up on the new hardware.

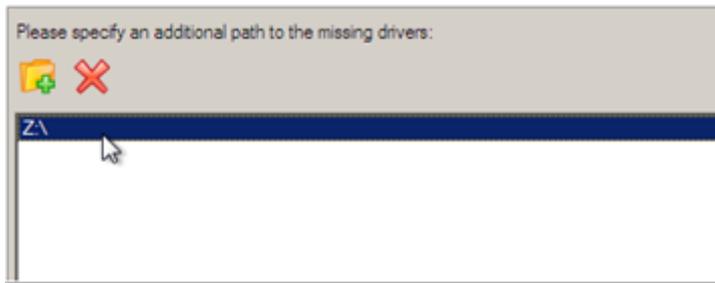


10. The wizard can search for drivers on a local disk or a mapped network share. In our case it's on a network share, this is why we need to map it first.



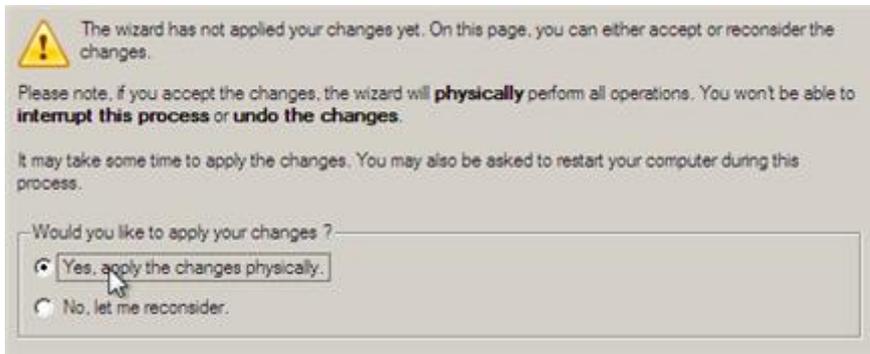
11. When done, we can select it as target.





The wizard enables to specify several driver repositories.

12. If the wizard has found all missing drivers, it will ask you to confirm the operation. Apply the changes to complete.



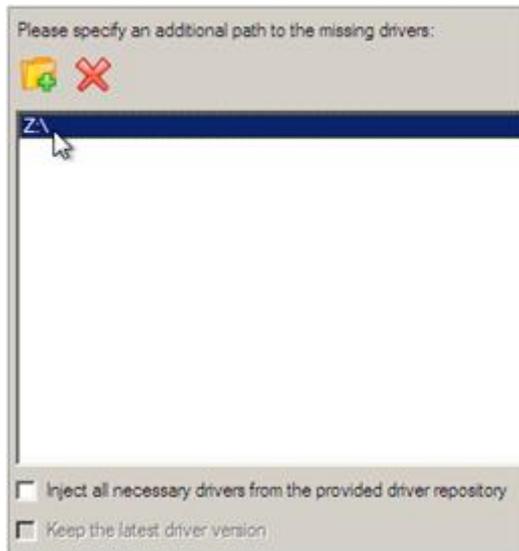
After the operation is completed the system will be bootable on the new hardware. After the startup, Windows will initiate reconfiguration of all Plug'n'Play devices. It's a standard procedure, so please don't worry and prepare the latest drivers at this step to get the most out of the system.

### Advance scenario specifics

1. To launch the advance mode, select **Set parameters for the OS adjustment**.



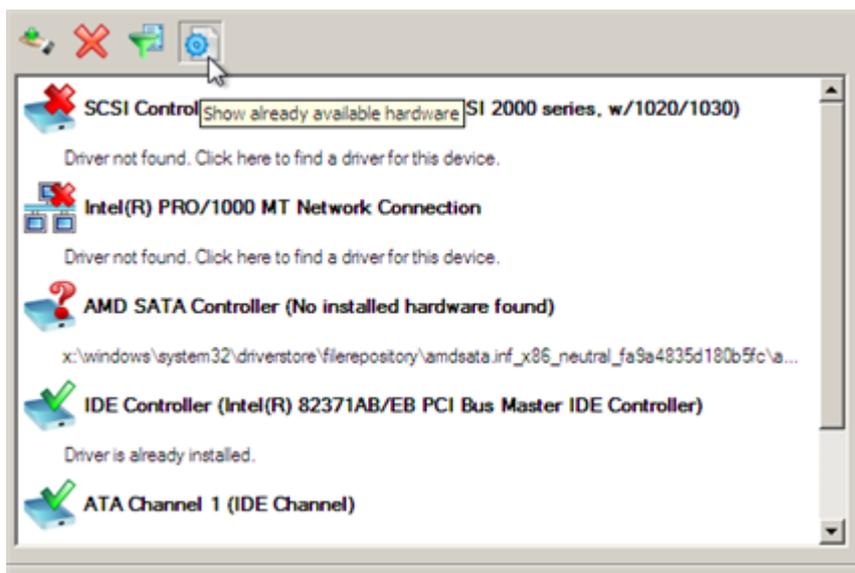
2. When setting additional driver repositories, you can specify how to process drivers for found hardware.



- **Inject all necessary drivers...** Mark the checkbox to force injection of all drivers for your devices from the given driver repository(s), even if there are already installed drivers for some hardware. Please use this option if you suspect any of the installed drivers of not matching your hardware.
- **Keep the latest driver version.** Mark the checkbox to keep the latest version of drivers during the forced re-injection. You can use this option only when the above option is active.

3. Just before the OS adjustment, you can additionally:

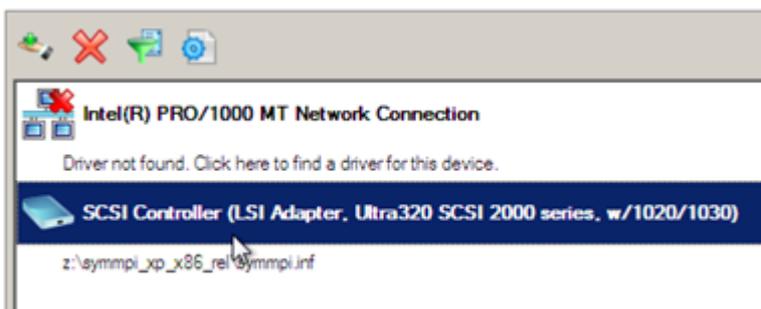
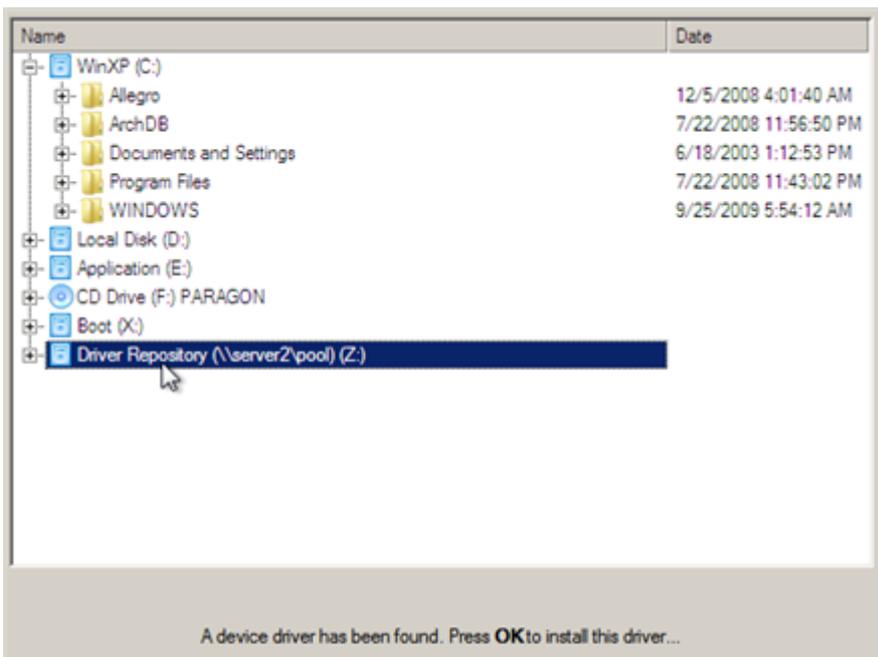
- View all found hardware devices and their driver status by clicking . The wizard names all devices according to their model description, not some alphanumeric code, which is very convenient. So you can compare the listed devices with the given hardware to make sure the wizard has analyzed your system correctly.



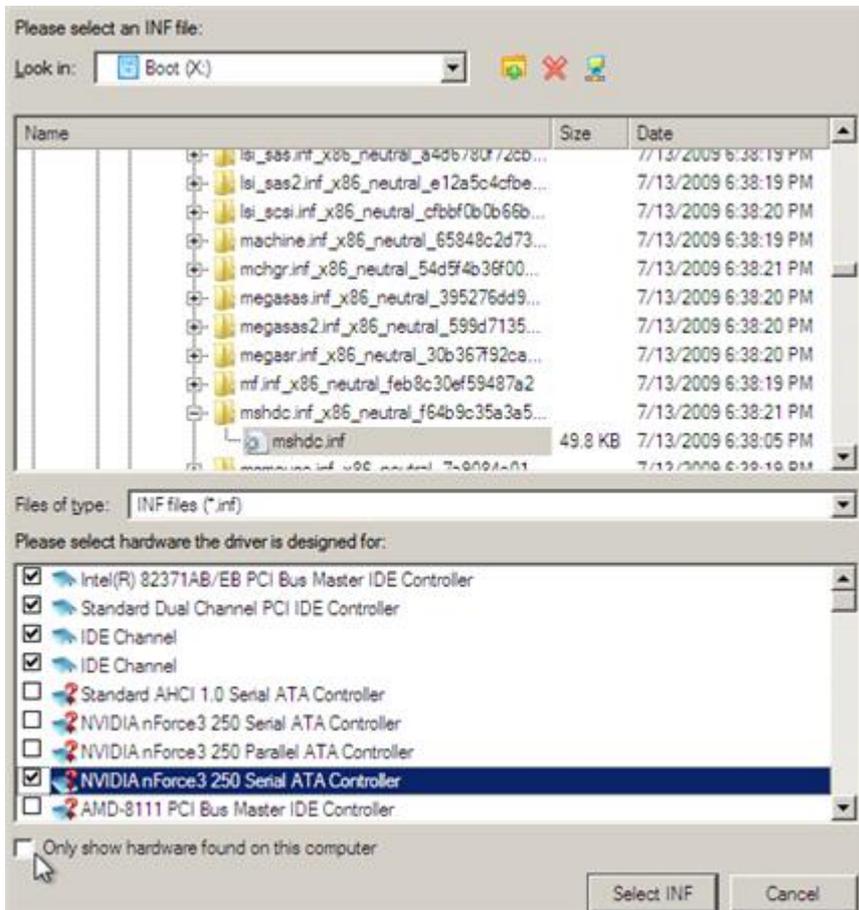
- Filter devices without drivers by clicking . Unlike the automatic mode, where only boot critical devices (storage controllers) without drivers are being reported, here you can view and inject drivers for network cards as well.



- Add a driver for each device that lacks it by clicking on the device, then browsing for the required location. The wizard will then match the device with drivers inside the given location and pick the right one.

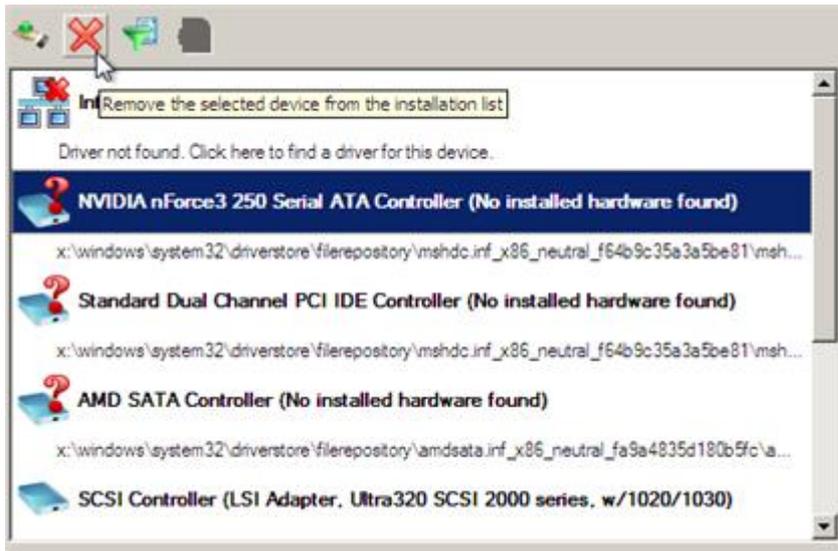


- Manually add a driver for a device that has not been found by our wizard by clicking , then specifying the required .INF file.



When selecting an .INF file that contains several driver records for hardware you both, have in the system and don't have, you can filter the list by marking the appropriate checkbox.

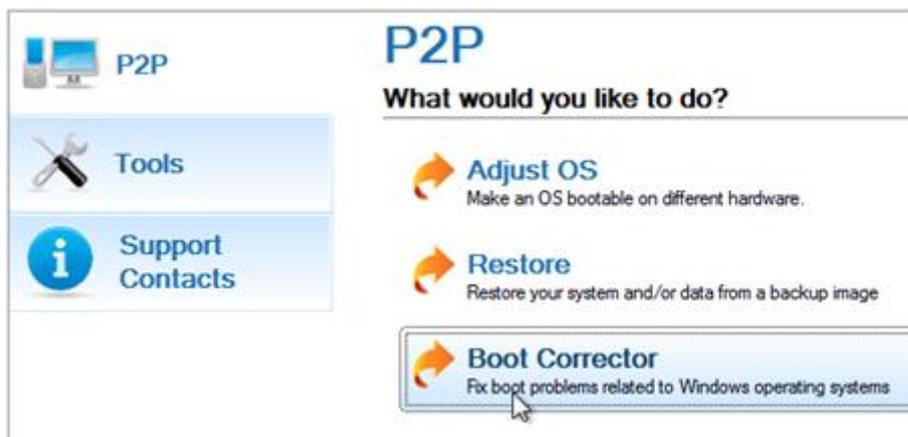
- Remove a driver for a device, which has not been found in the system.



## Correcting BCD (Boot Configuration Data)

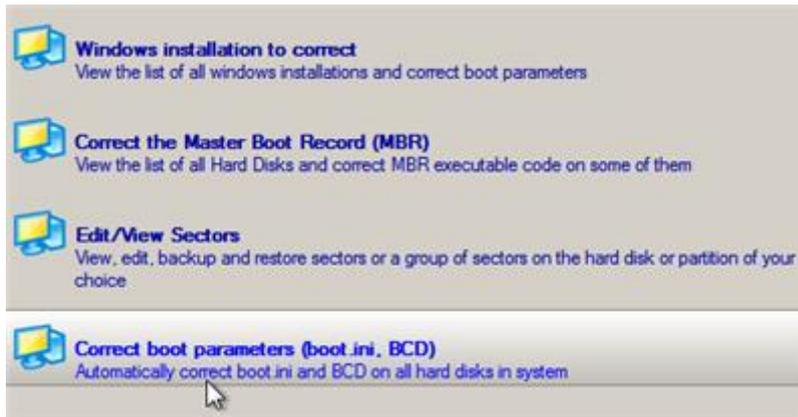
To automatically correct BCD of a Win2K+ system, please do the following:

1. [Start up the computer from our WinPE media.](#)
2. Launch the **Boot Correction Wizard**.

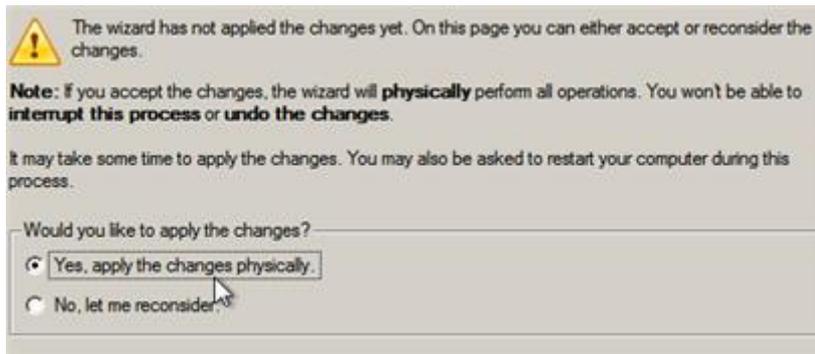


Our WinPE 3.0 based environment offers excellent hardware support. However in case it doesn't have a driver for your disk controller, your hard disks will be unavailable. Please consult the [Adding specific drivers](#) scenario to know how to tackle this issue.

3. On the Wizard's Welcome page, click the Next button.
4. Select **Correct boot parameters...** to let the wizard fix BCD in all found Win2K+ installations.



- The wizard will ask you to confirm the operation. Apply the changes to complete.



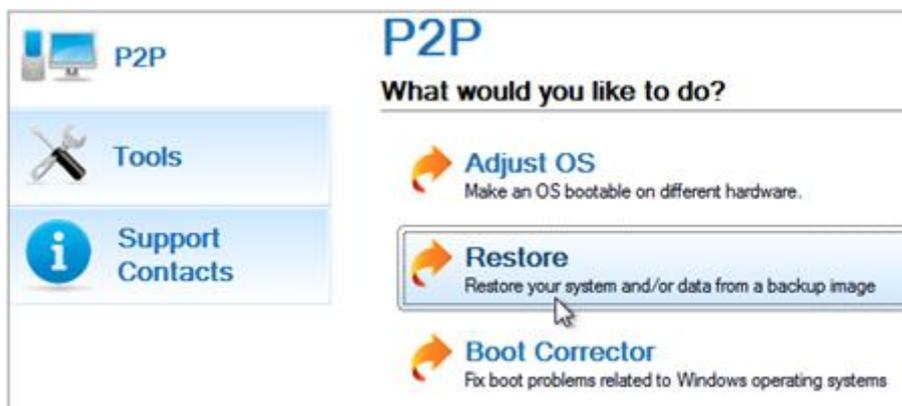
- After completing the operation close the wizard, and then reboot the computer.

## Restoring System Partition from Network

Let's assume that your computer fails to boot because of a virus attack or corruption of some system critical files. But you've got a backup of your hard disk on a remote backup server. That's just enough to easily get your system back on track again.

To restore your system partition from a backup image located on a network drive, please do the following:

- [Start up the computer from our WinPE media.](#)
- Launch the **Restore Wizard**.



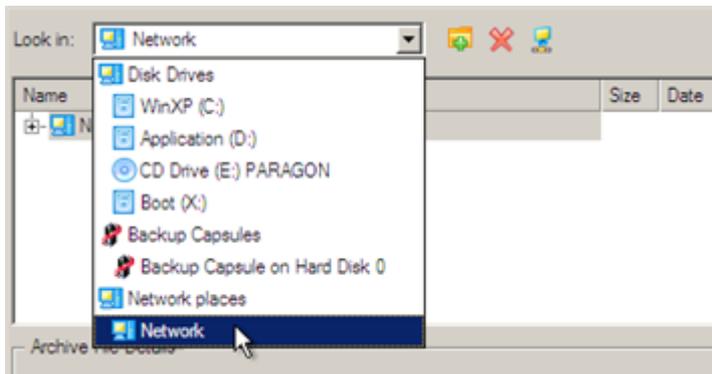
**Our WinPE 3.0 based environment offers excellent hardware support. However in case it doesn't have a driver for your disk controller, your hard disks will be unavailable. Please**

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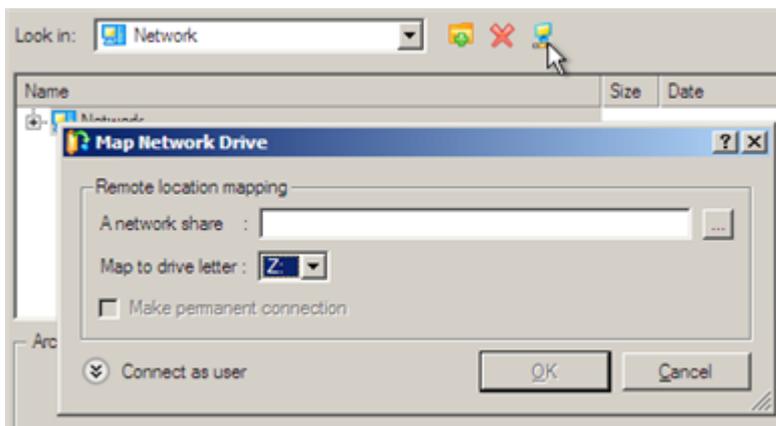
consult the [Adding specific drivers](#) scenario to know how to tackle this issue.

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3. On the Wizard's Welcome page, click the Next button.
4. On the Browse for Archive page you need to specify the required backup image. So you should take the following steps to do that:
  - Select **Network** as a backup destination;



- Map a network disk where your archives are placed:
  - Call the Map Network Drive dialog by clicking the appropriate button;



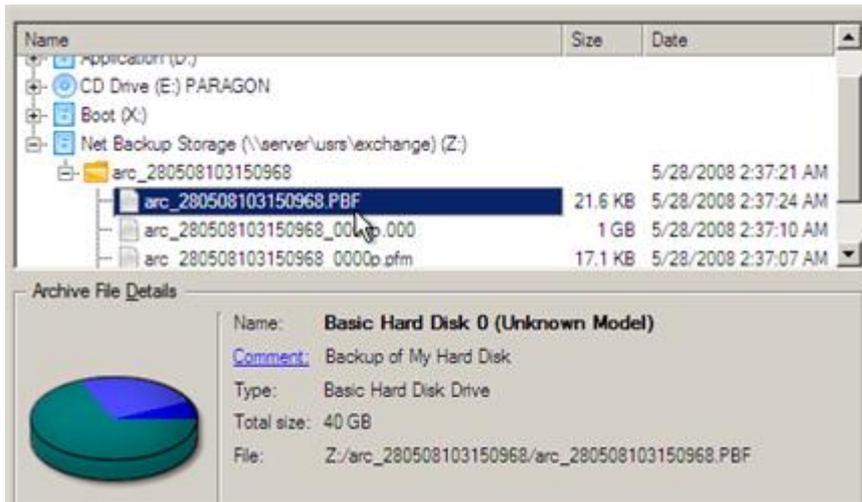
- Click the standard browse button [...] to browse for the required network share or manually enter a path to it;
- Define a letter from the pull-down list of available drive letters;
- Click the Connect as user button at the foot of the dialog page to specify a user name and password to access the selected network share if necessary.



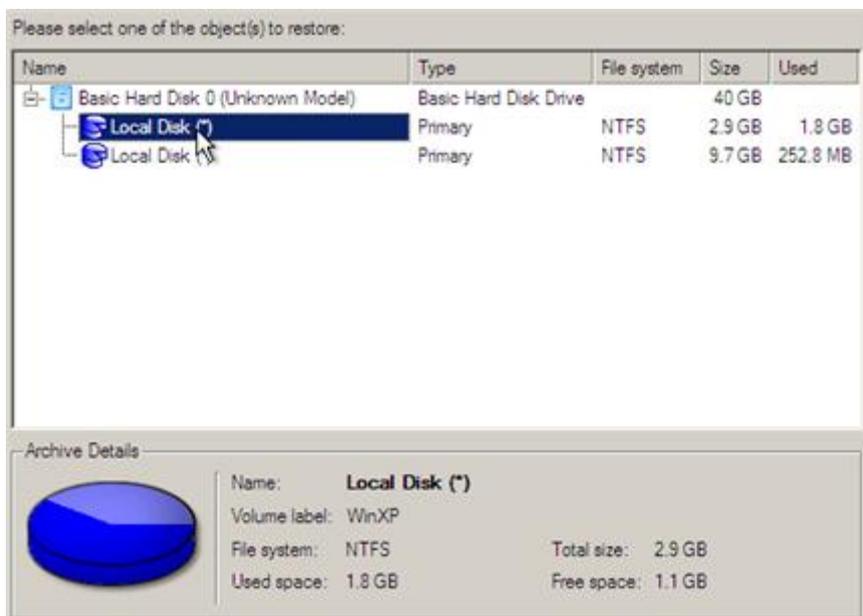
You can also map a network disk with [Network Configurator](#).

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- Choose the required archive in the browser-like window. The Archive File Details section displays a short description of the selected image.



5. The What to Restore page displays detailed information about the contents of the archive. Select the required item to restore. In our case it is the first partition of the disk.



6. On the Where to Restore page specify a hard disk, then one of its partitions to restore the image to (if several in your computer). By default, the program offers to restore the archive exactly where it belongs. That's what we actually need.

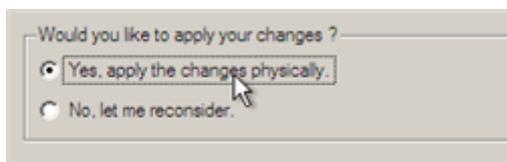


**All contents on the partition selected for restoring purposes will be deleted during the operation.**

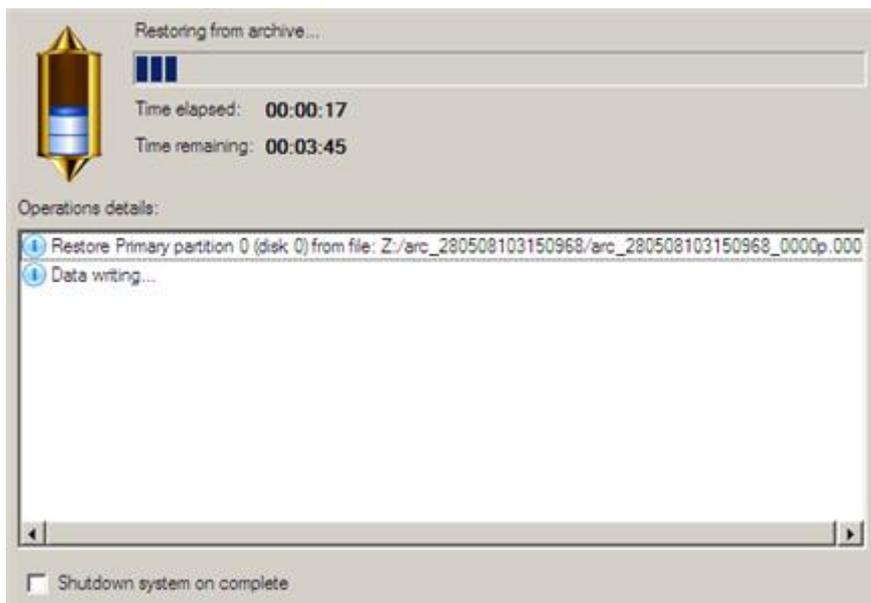
7. On the Restore Results page you can see the resulted disk layout. Besides there's the possibility to change size of the partition and its location if necessary as well as assign a particular drive letter.



8. On the next page of the wizard confirm the operation by selecting the appropriate option.



9. In the Progress window you can see in real-time a detailed report on all actions carried out by the program.



Mark the checkbox at the bottom of the window to automatically switch off the computer on the successful accomplishment of the restore operation.

10. After completing the operation close the wizard, and then reboot the computer.



**To make a Win2K+ operating system bootable on different hardware, please additionally complete the [P2P Adjust OS Wizard](#).**

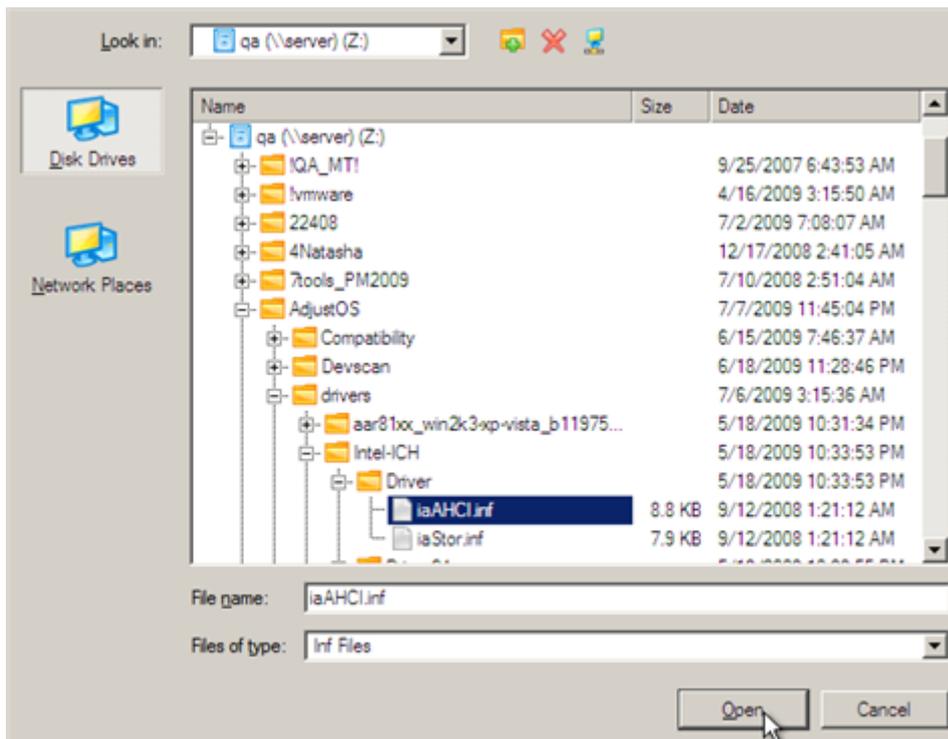
## Extra Scenarios

### Adding specific drivers

Our WinPE environment offers excellent hardware support. Anyway you've got the option to add drivers for specific hardware with a handy dialog.

To add drivers for specific hardware, please do the following:

1. Once you accept the agreement, you will see the Universal Application Launcher. Click **Load Drivers**.
2. In the opened dialog browse for an .INF file of the required driver package located on a floppy disk, local disk, CD/DVD or a network share. Then click the **Open** button to initiate the operation.



To know how to map a network share, please consult the [Configuring network](#) scenario.

3. You will be notified on the successful accomplishment of the operation. Click **Yes** to load another driver or **No** to close the dialog.



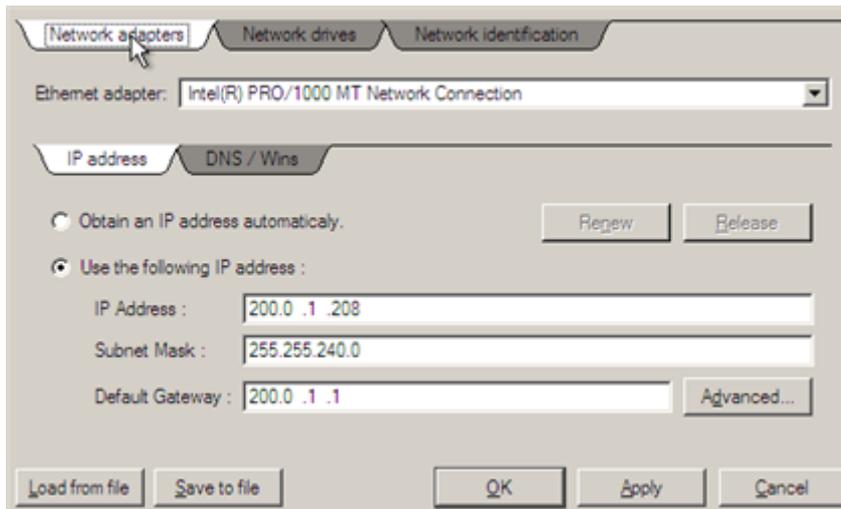
Our WinPE 3.0 recovery environment is 32-based, thus you need to use 32-bit drivers for injection.

## Configuring network

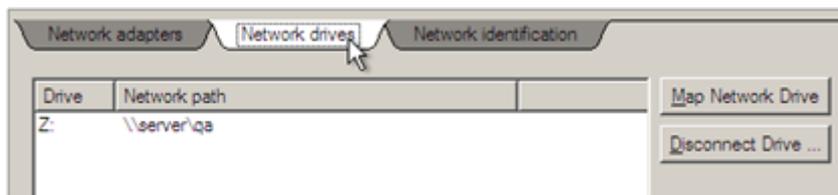
If your local network has a DHCP server, a network connection will be automatically configured once our WinPE environment has been started up. Otherwise you will need to do it manually with a handy dialog by providing an IP address, a network mask, default gateway, etc. Besides with its help you can easily map network shares.

To manually set up a network connection and map a network share, please do the following:

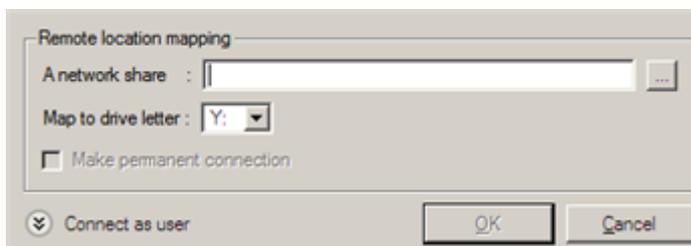
1. Once you accept the agreement, you will see the Universal Application Launcher. Click **Configure Network**.
2. In the opened dialog provide an IP address, a network mask, default gateway, etc. for your network device.



3. Click the **Network drivers** tab to map a network share.



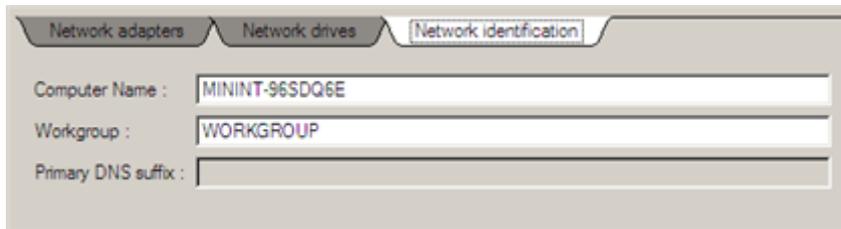
4. Click **Map Network Drive** and provide all the necessary information to map a network share in the opened dialog:



- Click the standard browse button [...] to browse for the required network share or manually enter a path to it;
- Define a letter from the pull-down list of available drive letters;
- Click the **Connect as user** button at the foot of the dialog page to specify a user name and password to access the selected network share if necessary.

By clicking **Disconnect Drive...** you can delete an existing network share if necessary.

5. Click the **Network identification** tab to change a network name of your computer (generated automatically) and a workgroup name.



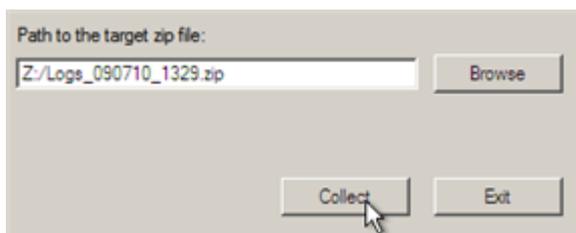
6. By default, the wizard saves all network settings in the netconf.ini file located on the WinPE RAM drive, thus it will only be available until you restart the computer. However, you can just once configure your network device and then save this file to some other destination, for instance a local drive, and this way avoid constant re-configuration, just by providing a path to it. So Click **Save to file** to save the netconfig.ini file to the required destination.

### Saving log files

The program enables to simplify the procedure of sending support requests to the Paragon Support Team. In case of having difficulties with handling the program, you, with the help of this very function, can address the company support engineers and provide them with all the information they need such as the disk layout, performed operations, etc. in order to tackle the encountered problem. Information of that kind is stored in log files.

To prepare a log files package, please do the following:

1. Once you accept the agreement, you will see the Universal Application Launcher. Click **Log Saver**.
2. In the opened dialog browse for the required location of the log files package or manually provide a full path to it. Click **Collect** to initiate the operation.



**Log files do not contain any confidential information on the operating system settings or the user documents.**

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