



Whitepaper

Virtualization Migration Solutions Overview and Feature Compare Matrix



Eenvoud in ICT

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DOCUMENT OVERVIEW

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REVIEWERS

Version	Date	Reviewer	Remarks
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REFERENCES

Reference	Date	Title



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1. INTRODUCTION

This matrix compares the features of the industry's most popular virtualization migration products. The focus of the differences between the products is their migration possibilities. The products often offer more than migration possibilities; disaster recovery and back-up on remote sites are among those extra options. The websites of the companies that provide the products can be visited for more information.

1.1 PURPOSE OF THIS DOCUMENT

The purpose of this document is to build a document not influenced by any vendor. About the author

Peter van den Bosch, Solutions Consultant PQR.

Peter van den Bosch born in 1961, studied System and Network Engineering and started his career as a Dispatcher at Centric IT Solutions. He has been working as a Solutions consultant at PQR since 2005.

Focusing on Server & Storage, Virtualization and Application Delivery solutions, PQR implements and migrates advanced ICT-infrastructures and has achieved the highest certifications of its most important partners: HP Preferred Partner Gold, Microsoft Gold Certified Partner, Citrix Platinum Solution Advisor, VMware Premier and Consultancy Partner.

In his job, Peter is primarily focused on Server & Storage Virtualization. He is a MCSE, CCA, VSP, VTSP, VAC VCP, VXP, VTP, CPSA, HP StorageWorks AIS.

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1.2 ABOUT PQR

"It is easy to complicate simple matters" Very few people have the ability to simplify something that is complicated. Consider the rubber band created by the British inventor Stephen Perry in 1845, for example. Complex and yet straightforward at the same time. PQR stands for the same straightforwardness. But in a different field, namely ICT infrastructures, with the focus on:

- Server & Storage Solutions;
- Application and Desktop delivery;
- Virtualization.

"Simplicity in ICT", experience how PQR can make ICT manageable and predictable via solutions that are linked to one another, geared to the future, flexible, inventive and solid at the same time. Work together with a company that likes the result-oriented approach and with personnel who ensure that a solution simply works. ICT has never been that straightforward! PQR delivers advanced infrastructures with a focus on Server & Storage and Application & Desktop Delivery solutions and the associated migration, consolidation and virtualization paths including network and security. PQR is a Cisco Partner, a Citrix Platinum Solution Advisor, a CommVault Value Added Reseller, and HP Enterprise Specialist Partner, an HP ProCurve Elite Partner, a threefold Microsoft Gold Partner, a NetApp Gold Reseller, an RES Platinum Partner, a VMware Premier Partner and a Websense Platinum Partner. PQR's customers are active in all sectors of society and a significant part of the sales is realized with non-profit organizations, the health care sector, education and local and national government.

1.3 WE NEED FEEDBACK

We try to provide accurate, clear, complete, and usable information. If you have any comments, corrections, or suggestions for improving this document, we want to hear from you! Please send e-mail to peter.van.den.bosch@pqr.nl. Include the product name and version number, and the title of the document in your message

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2. P2V PRODUCTS

P2V or Physical to Virtual migration is the process of migrating a X86 hardware server to a server based virtualization Platform.

In the last version of this document I compared 4 products.

Software Version
PlateSpin PowerConvert 6.6 (Build 4075)
VMware Converter 3.0.1 Enterprise Edition (Latest Released Version: 3.0.1, Build 44840)
Vizioncore vConverter
Leostream P>V Direct 3.0

The companies that released these products gone through some major changes. Acquisitions of companies, integration in other products en stopping further development are among the changes.

2.1 PLATESPIN

The Platespin Company is now a part of Novell. The Platespin Powerconvert product is divided in two different products called Platespin Migrate and Platespin Protect. Migrate is the tool for *2* migration and Migrate protects servers both are based on the workload portability technology.

In this document only the **Platespin Migrate** product will be reviewed.

2.1.1 Platespin Migrate

Platespin Migrate Quote:

PlateSpin Migrate is a powerful workload portability and migration solution from Novell that migrates server workloads over the network between physical servers, virtual hosts and image archives. PlateSpin Migrate remotely decouples workloads from the underlying server hardware and streams them to and from any physical or virtual host – all from a single point of control. With the broadest multiplatform support for hypervisors and operating systems, PlateSpin Migrate provides organizations with a mature, proven solution for testing, migrating and rebalancing workloads across infrastructure boundaries from desktop to data center.

2.1.2 Platespin Protect

Platespin Protect Quote:

PlateSpin Protect is a powerful workload protection solution from Novell that protects and rapidly recovers whole server workloads including data, applications and operating systems – all from a single point of control. In the event of a production server outage or disaster, workloads can be rapidly powered on and continue to run as normal until the production environment is restored. PlateSpin Protect provides a simple, flexible and cost-effective solution for protecting physical and virtual workloads in the data center.

2.1.3 The Platespin/Novell Company

PlateSpin Workload Management solutions from Novell are enterprise-class solutions that simplify the ongoing management of server workloads across a mixed IT environment.

Engineered to fit into your existing IT infrastructure, our products scale as your data center evolves. Our PlateSpin Workload Management solutions profile, migrate, protect and manage server workloads on physical machines and virtual hosts over the network between multiple hypervisors and computing platforms. These cohesive solutions allow you to significantly reduce management time, operating costs, and complexity and risk. In addition, they transform your IT environment into a more efficient, well balanced and resilient next-generation data center.

2.2 VMWARE

VMware integrated **VMware Converter** into vCenter but there is also a separate installer available VMware Converter Standalone.

Download is available in this location:

<https://www.vmware.com/tryvmware/?p=converter>

2.2.1 The VMware Company

VMware® Converter is the next generation conversion tool designed to easily create virtual machines from sources such as physical machines, other VMware virtual machines formats (VMware Server, VMware Workstation, etc) or 3rd party formats. VMware Converter provides centralized management, plus, fast and reliable conversions. The goal of VMware Converter is to shrink the amount of time that IT professionals spend converting physical machines to virtual machines by reducing the amount of manual effort required for each conversion. VMware Converter provides the ability to do remote conversion with zero disruption to the source server.

2.3 VIZIONCORE

The product is called **Vizioncore vConverter**.

2.3.1 The Vizioncore Company

Founded in 2002 and headquartered in Buffalo Grove, IL, Vizioncore Inc. is a fully-owned subsidiary of Quest Software. Vizioncore provides comprehensive and innovative set of solutions that extend and enhance the capabilities of virtualized infrastructures. With operations in North America, South America, EMEA, Asia and Australia, Vizioncore has established itself as a leader in the virtualization industry. Their sales channel is comprised of more than 2,200 partners and over 15,000 end users across its entire software suite. Vizioncore solutions are easy to use, cost effective and can provide immediate return on investment.

2.4 LEOSTREAM

Leostream stopped the release of the **P>v Direct 3.0** tool. This product will no longer be a part of this document.

3. ADDITIONAL INFORMATION

3.1 UNIQUE FEATURES

Building this document also alerts product managers to promote their products unique features. Next version of his document will include a advanced feature section which will be a summary of the unique differentiators.

These differentiators will not be compared between the companies but summarized with a short description of the function.

3.2 NEW P2V PRODUCTS

Recently several new P2V tools where released. Next version of this document will include the new tools:

- Xenconvert
- System Center Virtual Machine Manager 2007

4. P2V TEST ENVIROMENT

4.1 STARTING POINT

In a virtual infrastructure we would like to install any supporting tools in a Virtual Machine if possible.

We installed the P2V tools on a Virtual Windows 2003 R2 SP1 server.

4.2 PHYSICAL P2V CANDIDATE

The physical server we used for the P2V test is a HP Proliant DL 360 G1 Windows 2003 SP2 server with some installed Storage management tools. we did not perform tests with a Linux server, possible future releases will include Linux P2V tests.

4.3 ESX HOST TARGET

The target host is a HP Proliant DL385 G1 installed with VMware ESX 3.5 u3 server with local Storage only.

4.4 TARGETED END RESULT AFTER P2V

When the Virtualization is finished
Remove all unsupported and unnecessary hardware
Remove all unnecessary hidden devices
Uninstall all hardware related software (Example: HP Version control)
Resize memory and CPU to reasonable proportion (result from sizing)
Check IP Configuration
Resize disk to reasonable proportions (C:\ 15 GB, rest used size + 20%)
Separated virtual disk for all partitions
Install VMware Tools

5. END USER EXPERIENCE

In this chapter we will describe the End user experience , how easy is it to install, are the wizards complicated or easy etc.

5.1 PRODUCT VMWARE CONVERTER

VMware Converter Standalone 4.0.0 build 146302 default installation.

5.1.1 Installation

Installer size is 100 MB. Installation process is simple next, next and Finish. Time to install is about 4 minutes.

5.1.2 Licensing

Licensing is simple when you obtained the license file. Getting the license file was not easy, generating a license file for the complete VMware infrastructure with included P2V license is not possible. Some cutting and pasting solved this but not really user friendly.

5.1.3 Interface usage

Interface is simple to use, wizard leads user through P2V configuration steps. Hot cloning means installing the VMware Converter agent on the server that will be migrated, NT4 and Windows 2000 servers must be rebooted after installing the agent. Automated uninstalling the tool is possible.

Note!

When it is necessary to change the identity for the server the user needs to have the sysprep files available.

5.1.4 Time to setup P2V job

P2V Action Details	Time to configure P2V job in minutes
Hot migration, resizing disk C: to 15 GB, other disk resized in used space + 20%, split partitions in separate VMDK Files no identity changes	7
Hot Migration, no resizing, no identity changes.	5
Cold migration, resizing disk C: to 15 GB, other disk resized in used space + 20%, split partitions in separate VMDK Files no identity changes	12 (Needs Bootdisk)
Cold Migration, no resizing, no identity changes.	5 (Needs Bootdisk)

5.1.5 Time to convert

P2V Action Details	Time to finish P2V complete in minutes
Hot migration, resizing disk C: to 15 GB, other disk resized in used space + 20%, split partitions in separate VMDK Files no identity changes	17
Hot Migration, no resizing, no identity changes.	15
Cold Migration, resizing disk C: to 15 GB, other disk resized in used space + 20%, split partitions in separate VMDK Files no identity changes	38

P2V Action Details	Time to finish P2V complete in minutes
Cold Migration, no resizing, no identity changes.	34

5.1.6 Time to give virtual server a virtual identity

Job	Action	Time in minutes
Remove all unsupported and unnecessary hardware	After conversion in vSphere client	2
Remove all unnecessary hidden devices	After Conversion in virtual server	9
Uninstall all hardware related software (Example: HP Version control)	After Conversion in virtual server	7
Resize memory and CPU to reasonable proportion (result from sizing)	After conversion in vSphere client	0
Check IP Configuration	After Conversion in virtual server	2
Delete or save all Events	After Conversion in virtual server	2
Check all services	After Conversion in virtual server	2
Total		24

5.1.7 Finally

Cold migrating a server in a server vLan without DHCP gave us some thoughts. After booting the server with the Converter boot CD Network configuration must be set manual and we never thought about network speed, first try it was automatically set on 10MB half duplex. We spend about 20 minutes before we started configuring the actual job.

Editing the virtual hardware after conversion is really necessary. We had to change the SCSI adapter after converting the server, the tool installed the buslogic SCSI card and because we want to use the LSI Logic SCSI card we had to reconfigure.

After Changing the hardware we had a warning about a SCSI card mismatch just click yes and move on. The server booted correct. After logging some hardware was installed (NIC and SCSI card) and we had to reboot.

5.2 PRODUCT PLATESPIN MIGRATE

Platespin Migrate 8.0.0 build 5954 default installation.

5.2.1 Installation

Installing Platespin Migrate takes some time. There are several components that must be installed in a specific order before even starting with Platespin Migrate. The complete installation takes about 40 minutes, first the database, then server and last but not least the client. Large installer 845 MB

5.2.2 Licensing

we received the activation code for my licenses through mail. Cut and paste the activation key in the screen and finished. we used the off line registration it was a smooth process.

5.2.3 Interface usage

After starting the application we had to import the ESX host and the physical target. Easy drag and drop started a wizard that we could start in two modes advanced and Start Wizard we used the advanced option.

5.2.4 Time to Setup P2V job

P2V Action Details	Time to setup P2V job in minutes
Hot migration, resizing disk C: to 15 GB, other disk resized in used space + 20%, split partitions in separate VMDK Files no identity changes	5
Hot Migration, no resizing, no identity changes.	5
Cold migration, resizing disk C: to 15 GB, other disk resized in used space + 20%, split partitions in separate VMDK Files no identity changes	5
Cold Migration, no resizing, no identity changes.	5

5.2.5 Time to Convert

P2V Action Details	Time to finish P2V complete in minutes
Hot migration, resizing disk C: to 15 GB, other disk resized in used space + 20%, split partitions in separate VMDK Files no identity changes	17
Hot Migration, no resizing, no identity changes.	15
Cold Migration, resizing disk C: to 15 GB, other disk resized in used space + 20%, split partitions in separate VMDK Files no identity changes	38
Cold Migration, no resizing, no identity changes.	34

5.2.6 Time to give virtual server a virtual identity

Job	Action	Time in minutes
Remove all unsupported and unnecessary hardware	After conversion in vSphere client	2
Remove all unnecessary hidden devices	After Conversion in virtual server	9
Uninstall all hardware related software (Example: HP Version control)	After Conversion in virtual server	7
Resize memory and CPU to reasonable proportion (result from sizing)	After conversion in vSphere client	0
Check IP Configuration	After Conversion in virtual server	2
Delete or save all Events	After Conversion in virtual server	2
Check all services	After Conversion in virtual server	2
Total		24

5.2.7 Finally

What we really liked is the possibility in the job configuration to choose various options for cold and hot migrations. A real easy to use job configuration wizard.

5.3 PRODUCT VIZIONCORE VCONVERTER

Vizioncore vConverter

5.3.1 Installation

Large installer size is 242 MB. Installation process is simple next, next and Finish. Time to install is about 5 minutes.

5.3.2 Licensing

Licensing in a Virtual machine is not simple. First you have to setup a installation on a physical server and then you can connect the virtual server to the physical server that will be a sort of licensing host. This is not a user friendly configuration. We told Vizioncore about this issue there is a solution coming.

5.3.3 Interface usage

We really had to search for all the configuration options, when we found the options we where really pleasantly surprised! There are some really great configuration options. (RDM as Target, Remove Software during migration) What we missed is a setup wizard that would lead us to all the possibilities. And importing a set of servers from another subnet that we could not see in the network scan was not easy.

Importing a CSV file and giving it the proper extension was not a simple job.

Note!

When it is necessary to change the identity for the server the user needs to have the sysprep files available.

5.3.4 Time to Setup P2V job

P2V Action Details	Time to setup P2V job in minutes
Hot migration, resizing disk C: to 15 GB, other disk resized in used space + 20%, split partitions in separate VMDK Files no identity changes	4
Hot Migration, no resizing, no identity changes.	6

5.3.5 Time to convert

P2V Action Details	Time to finish P2V complete
Hot migration, resizing disk C: to 15 GB, other disk resized in used space + 20%, split partitions in separate VMDK Files no identity changes	25
Hot Migration, no resizing, no identity changes.	22
Cold Migration, resizing disk C: to 15 GB, other disk resized in used space + 20%, split partitions in separate VMDK Files no identity changes	33
Cold Migration, no resizing, no identity changes.	29

5.3.6 Time to give virtual server a virtual identity

Job	Action	Time in minutes
Remove all unsupported and unnecessary hardware	After conversion in vSphere client	2
Remove all unnecessary hidden devices	After Conversion in virtual server	9
Uninstall all hardware related software (Example: HP Version control)	After Conversion in virtual server	1
Resize memory and CPU to reasonable proportion (result from sizing)	After conversion in vSphere client (Not possible during conversion)	0
Check IP Configuration	After Conversion in virtual server	1
Delete or save all Events	After Conversion in virtual server	2
Check all services	After Conversion in virtual server	2
Total		17

5.3.7 Finally

The server we want to convert was in another subnet, we had to import the server manual with a CSV file. The format of the file is not clear the example in the manual did not do it for me.

Again we are impressed with some of the unique features!

6. SOFTWARE CHARACTERISTICS

× = Not applicable ✓ = applicable. Only supported features are compared.

Characteristics	Platespin Migrate	Standalone Converter	VMware Converter	Vizioncore vConverter
Usability				
Centralized Management console	✓	✓	✓	✓
Hot cloning	✓	✓	✓	✓
Cold cloning	✓	✓	✓	✓
Drag-and-drop Interface in Centralized management Console	✓	×	✓	✓
Server Remote Control from Centralized management Console	✓	×	×	×
Software or client installation on migration candidate	×	✓	×	×
Scheduled tasks	✓	×	✓	✓
Disk alignment during migration (Only Windows OS)	✓	✓	×	×
Stop server/workload services during/After Conversion	✓	✓	✓	✓
Convert local disks to RDM	✓ ¹	×	✓	✓
Conversions				
P2V Physical to Virtual	✓	✓	✓	✓
V2V Virtual to Virtual	✓	✓	✓	✓
I2V Image to Virtual	✓	✓	×	×
P2P Physical to Physical	✓	×	×	×
V2P Virtual to Physical	✓	×	×	×
I2P Image to Physical	✓	×	×	×
P2I Physical to Image	✓	×	×	×
V2I Virtual to Image	✓	×	×	×
Supported Source Operating Systems (*2V)				
Windows NT 4.0 Server SP4 and up	✓ ²	✓	✓ ³	✓ ³
Microsoft Windows 2000 Professional SP0, SP1, SP2, SP3, SP4	✓	✓	✓	✓
Windows 2000 Server/ Advanced Server SP0, SP1, SP2, SP3, SP4	✓	✓	✓	✓
Windows XP Professional SP0, SP1, SP2 (32 and 64 Bits)	✓	✓	✓	✓
Windows Vista Ultimate (32 and 64 Bits)	✓	✓	×	×
Windows Vista Business (32 and 64 Bits)	✓	✓	×	×
Windows 2003 Server Standard / Enterprise SP0, SP1, SP2 / 32 bits	✓	✓	✓	✓
Windows Small Business Server 2003 2.5.0	✓	×	✓	✓
Windows 2003 Server Standard / Enterprise (x64) SP0, SP1, SP2	✓	✓	✓	✓
SLES8 SP0-SP4 (32 and 64 Bits)	✓	✓ ⁴	×	×
SLES9 SP0-SP3 (32 and 64 Bits)	✓	✓ ⁴	×	×
SLES10 SP0-SP1 (32 and 64 Bits)	✓	✓ ⁴	×	×
RHEL 2.1 GA - U7	✓	✓ ⁴	×	×
RHEL 3 GA - U9	✓	✓ ⁴	×	×
RHEL 4 GA - U5 (32 and 64 Bits)	✓	✓ ⁴	×	×
RHEL 5 (32 and 64 Bits)	✓	✓ ⁴	×	×
Supported Target virtualisation Platform (*2V)				
vSphere 4.0	× ⁷	✓	×	× ⁷
VMware Virtual Infrastructure 3.*	✓	✓	✓	✓
VMware ESX Server 2.5.x	✓	✓	✓	✓
VMware ESX Server 2.1.1+	✓	✓	✓	✓
VMware ESX 3i	✓	✓	✓ ⁵	✓ ⁵
VMware Server (Windows) 1.00, 1.0.4	✓	✓	✓	✓
Microsoft Virtual Server 2005 SP0, SP1	✓	×	✓	✓
Microsoft Virtual Server 2005 R2 SP1 (Build 1.1.603.0 EE)	✓	×	✓	✓
Citrix XenServer 5	✓	×	✓ ⁵	✓ ⁵

Characteristics	Platespin Migrate	Standalone VMware Converter	Vizioncore vConverter
Virtual Iron	✓	✗	✓
Microsoft Hyper-V	✓	✗	✗
Supported Target Image sizes (*2I)			
Platespin flexible Image	✓	✗	✗
Supported Source Image sizes (I2*)			
Symantec Backup Exec System Recovery (formerly LiveState recovery) 6.5/7.0	✓	✓	✗
Norton Ghost versions 9 or higher	✓ ⁶	✓	✗
VMware Consolidated Backup (VCB) images	✗	✓	✗
Acronis True Image 9	✓	✓	✗
LiveState Recovery 3.0 and 6.0	✓	✓	✗
Norton Ghost version 9.0, 10.0 and 12.0 (.sv2i files)	✗	✓	✗
StorageCraft ShadowProtect (experimental support)	✗	✓	✗
Supported Source Operating Systems (*2P) NOTE: 64-bit support not available for *2P migrations			
Windows 2000 Server/ Advanced Server SP0, SP1, SP2, SP3, SP4	✓	✗	✗
Windows 2003 Server Standard/ Enterprise SP0, SP1, SP2	✓	✗	✗
Windows Small Business 2003 2.5.0	✓	✗	✗
Windows XP Profesional SP0, SP1, SP2	✓	✗	✗
SLES 8 SP0, SP1, SP2, SP3, SP4 SLES 9 SP0, SP1, SP2, SP3 SLES 10, SP0, SP1	✓	✗	✗
RHEL 2.1 GA –U7, RHEL 3 GA-U9, RHEL 4 GA-U5, RHEL 5	✓	✗	✗
RedHat 7.3	✓	✗	✗
RedHat 8	✓	✗	✗
Server Configuration during conversion			
Disk resizing	✓	✓	✓
Memory resizing and reconfiguration	✓	✓	✓
CPU rezising and reconfiguration	✓	✓	✓
Convert multiple disk simultaneous	✓	✓	✓
topping Services during or after conversion	✓	✗	✓
Identity change Operating System (Hostname)	✓	✓ ⁸	✓ ⁸
Change Network settings	✓	✓	✓
Change domain membership	✓	✓ ⁸	✓ ⁸
Drive Filtering	✓	✓	✓
Add disk during conversion	✓	✗	✗
Install VMware tools during conversion proces	✓	✓	✓
Security			
Encryption during remote conversion (File Transfer)	✓	✗	✗
Remote authentication	✓	✓	✓
Networking			
Add Network Interfaces during conversion	✓	✓	✗
Conversion between different subnets	✓	✓	✓
WAN conversion	✓	✓	✓
Solutions			
Email updates during or after conversion	✓	✗	✓
Incremental conversion for DR purposes	✓	✗	✓
Licensing			
Platespin Per server, pack varieous options through Powerstore or VAR's	✓		
VMware Licensed as part of support and subscription services with vCenter Management Server		✓	
Vizioncore vConverter several options			✓



6.1 VERSION OVERVIEW

Software Version
VMware Converter Standalone 4.0.0
PlateSpin PowerConvert 8.0
Vizioncore vConverter 4.0



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