

P2V Best Practices

From Concepts to Scenarios

-or-

P2V From A2Z

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Introduction

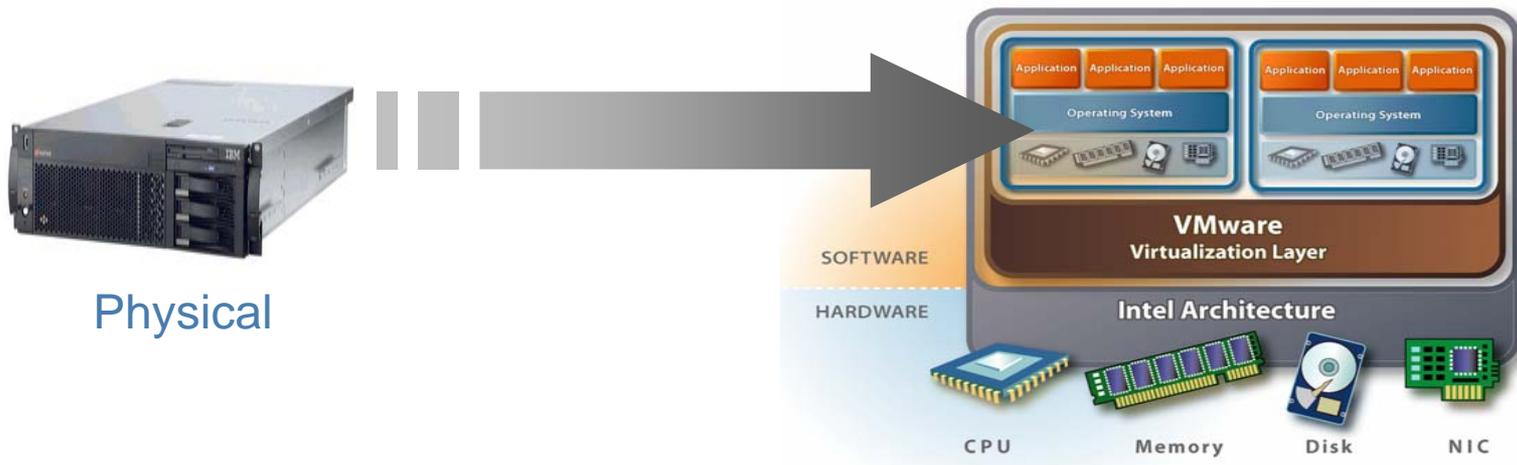
- Rick Watson
- Technical instructor
- VMware PSO-education
- VMware VCP, Microsoft MCSE, Novell CNE, Cisco CCNP, CompTIA Security+

Overview

- What is P2V?
- What is P2VA?
- The P2V process
- P2V with VMware P2VA
- P2V utilities and tools
- Usage scenarios

What Is P2V?

- Physical to virtual: The process of creating a virtual computer that exactly duplicates a physical computer.



What Is P2VA?

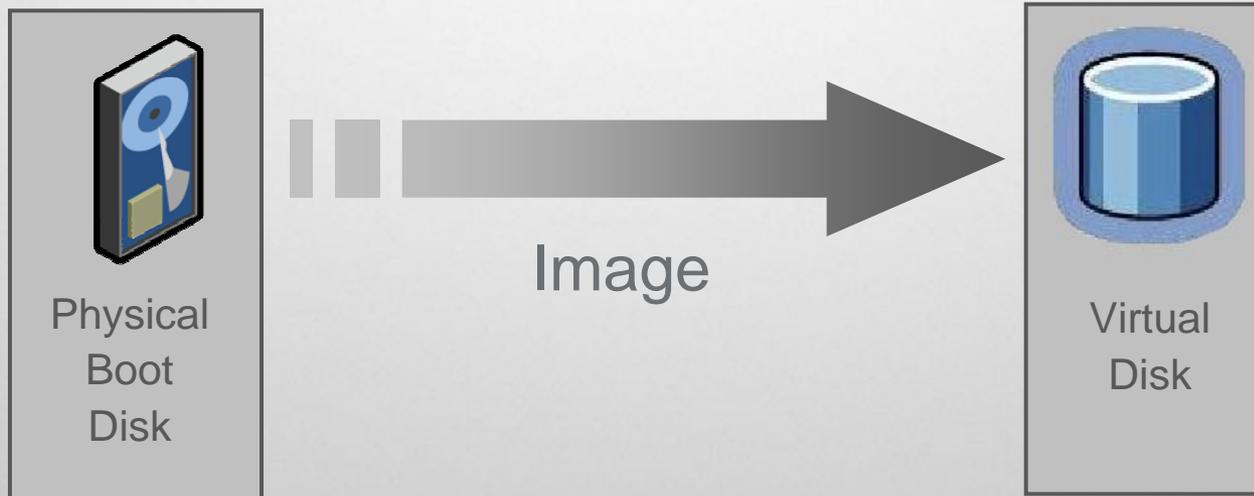
- P2V Assistant: A suite of VMware utilities that reliably creates a virtual computer which exactly duplicates a physical computer.

The P2V Process

- Step 1: Disk image the boot hard disk drive of the physical system into a virtual hard disk drive.
- Step 2: Reconfigure the new virtual boot disk to function in a virtual environment.

Step 1: Disk Image

- Use any disk imaging technique to copy the physical computer's boot hard disk into virtual hard disk.



What Gets Duplicated?

- The physical computer's operating system, service packs, applications, data, device drivers, configuration, SID, computer name, local users and groups, etc.

In other words, a complete, exact software "clone".

What's Not Duplicated?

- Hardware!

Issue: The boot hard disk drive and controller!

```
*** STOP: 0x0000007B (0xF241B84C,0xC0000034,0x00000000,0x00000000)
INACCESSIBLE_BOOT_DEVICE
```

```
If this is the first time you've seen this Stop error screen,
restart your computer. If this screen appears again, follow
these steps:
```

```
Check for viruses on your computer. Remove any newly installed
hard drives or hard drive controllers. Check your hard drive
to make sure it is properly configured and terminated.
Run CHKDSK /F to check for hard drive corruption, and then
restart your computer.
```

```
Refer to your Getting Started manual for more information on
troubleshooting Stop errors.
```

Step 2: Reconfigure

- Reconfigure the operating system on the new virtual boot disk to function in a virtual environment

Key Task:

Replace the disk driver for the physical boot hard disk with one that matches the virtual hard disk and controller.

P2V With VMware P2VA

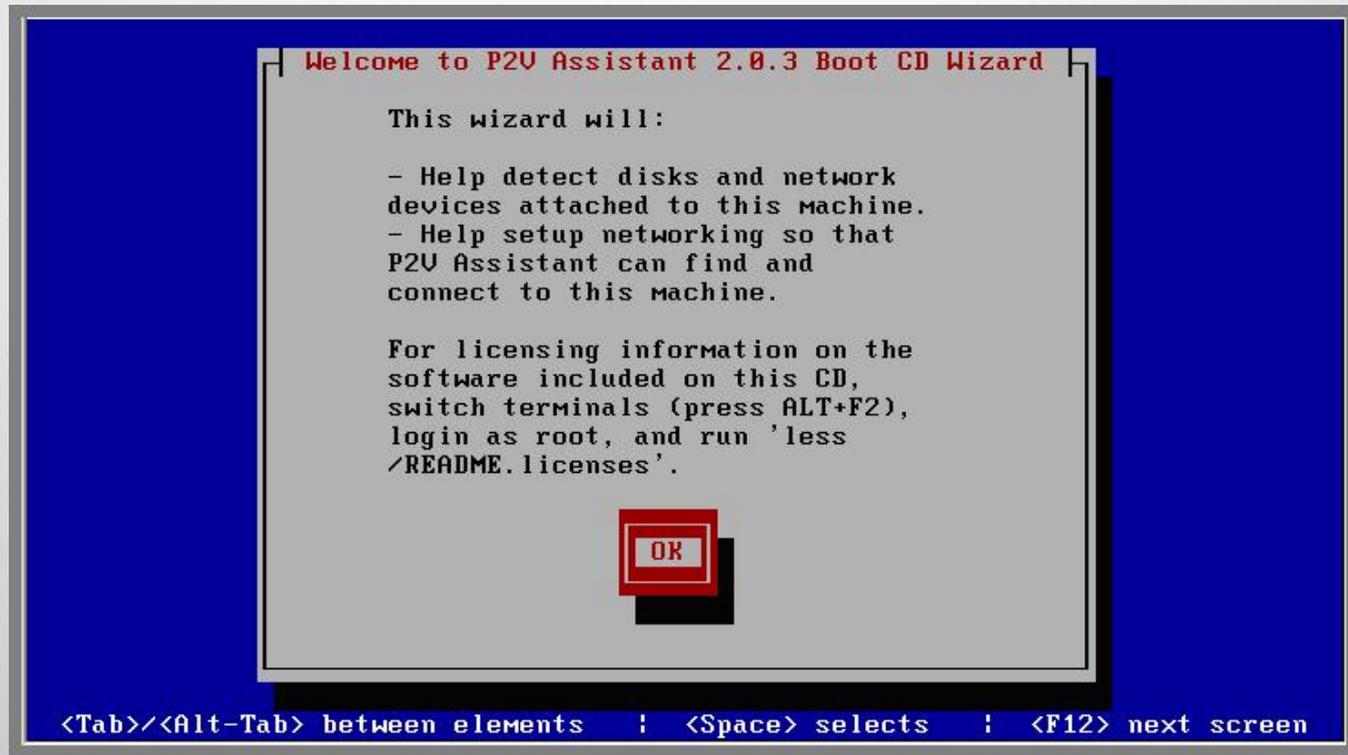
- The players:
 - P2VA boot CD
 - Helper virtual machine
 - P2V Assistant application

P2V With VMware P2VA

- The Process:
 1. Boot the physical system with the P2VA Boot CD
 2. Clone the physical boot disk into a new virtual disk
 3. Reconfigure the new virtual disk with P2V Assistant
 4. Create a new virtual machine using the new virtual disk
 5. Test and clean up the new virtual machine

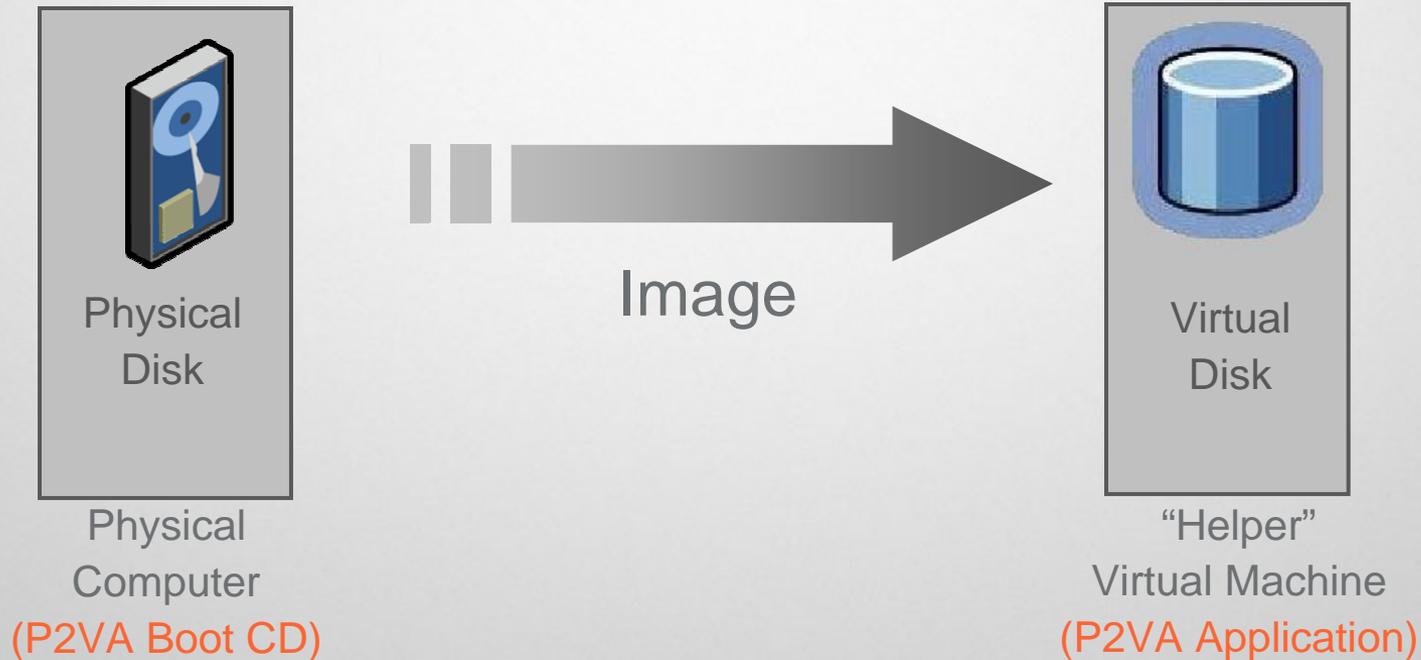
P2V with VMware P2VA

1. Boot the physical system with the P2VA Boot CD



P2V with VMware P2VA

2. Boot the physical system with the P2VA Boot CD



P2V with VMware P2VA

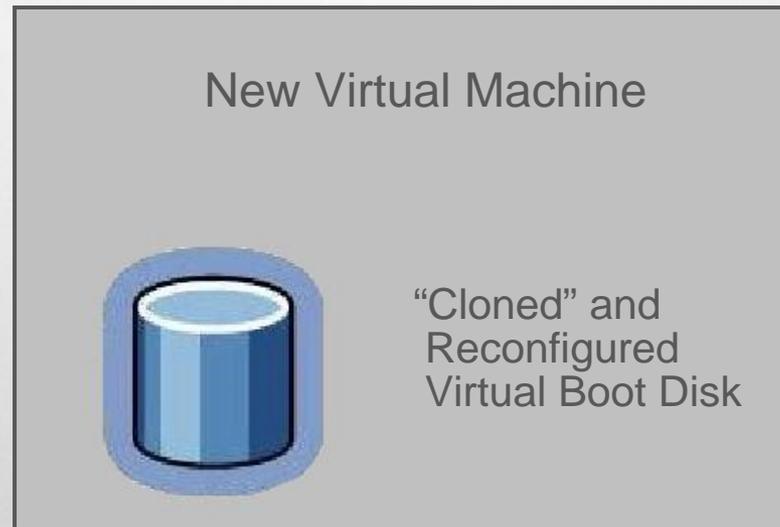
3. Reconfigure the new virtual boot hard disk with the P2V Assistant application running in a “Helper” virtual machine.



“Helper” Virtual Machine

P2V with VMware P2VA

4. Create a new virtual machine for the new boot disk



P2V with VMware P2VA

5. Test and clean up the new virtual machine

- Check log files
- Install VMware Tools
- Remove unused drivers
- Disable unneeded services

Demo

P2V with VMware P2VA

P2V Utilities and Tools

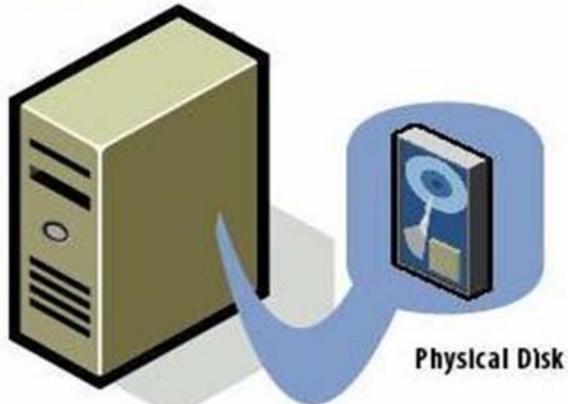
- DiskMount utility
- vDiskManager utility
- ESX Server vmkfstools utility
- Virtual machine importer

VMware DiskMount

- The VMware DiskMount utility permits a VMware virtual disk file to be accessed as a local disk.
- The DiskMount utility allows P2VA disk imaging and reconfiguration without using a virtual machine.

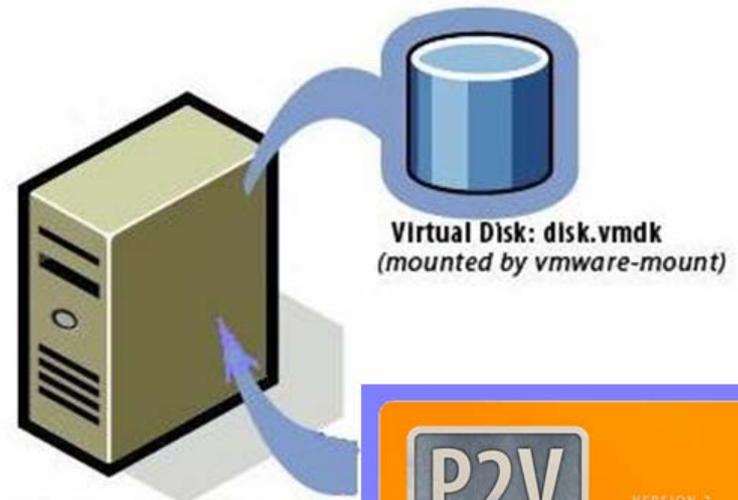
DiskMount in Action

P2VA
boot CD



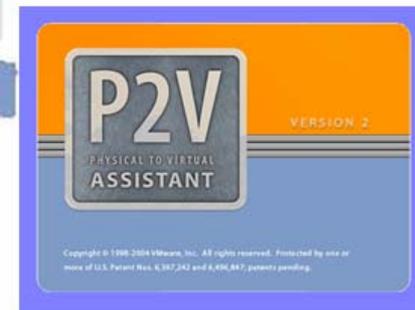
Physical Disk

Source
physical
computer

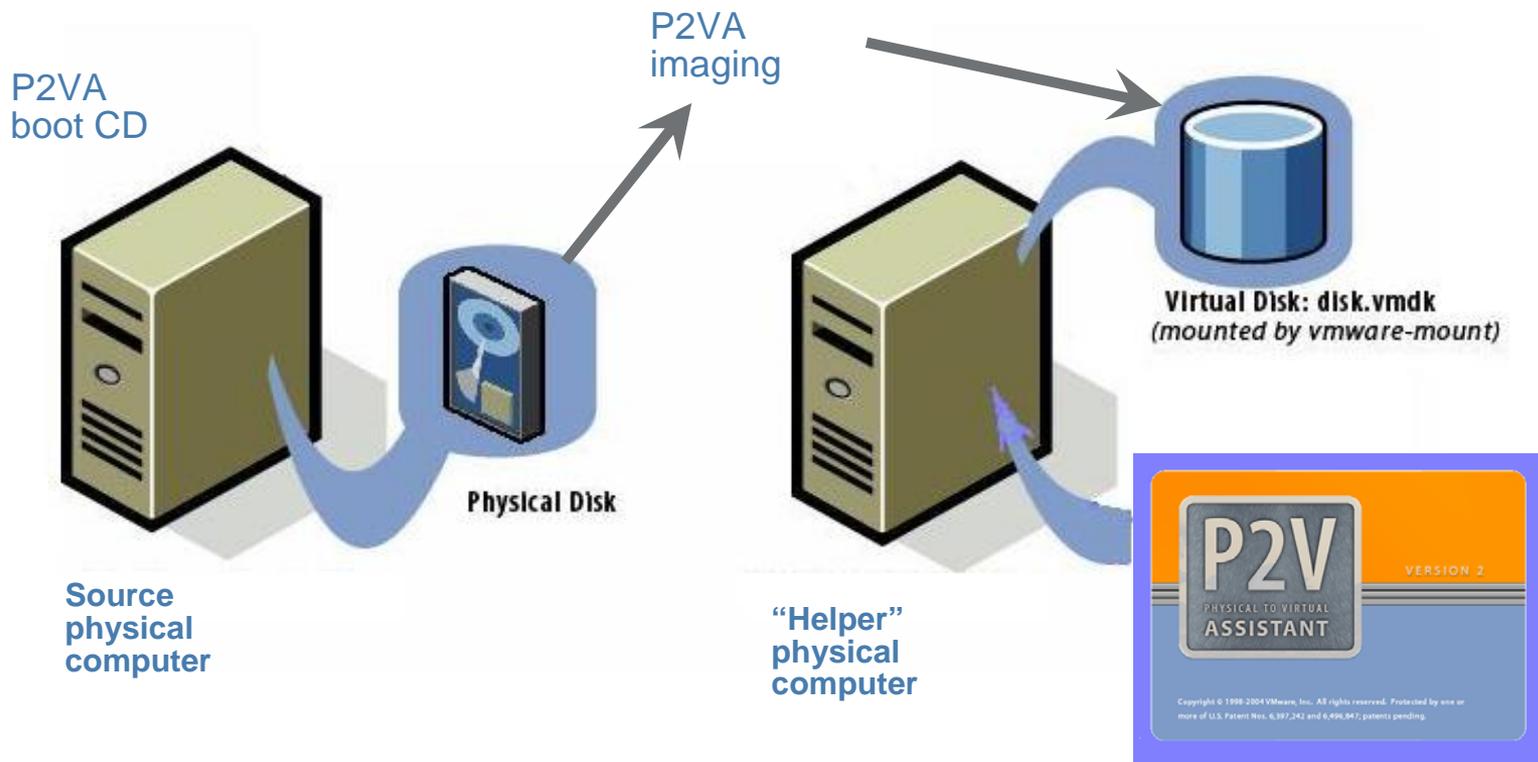


Virtual Disk: disk.vmdk
(mounted by vmware-mount)

"Helper"
physical
computer



DiskMount in Action



Demo

VMware DiskMount Utility

VMware vDiskManager

- The VMware vDiskManager* utility creates and manipulates virtual disk files
- Basic usage:
`vmware-vDiskManager options FileName.vmdk`

*It's included with "hosted" products (GSX Server, ACE, etc.)

Demo

VMware vDiskManager

vmkfstools Utility

- The VMware vmkfstools utility imports and manipulates virtual disk files on an ESX Server
-
- Basic usage:
`vmkfstools options FileName.vmdk VMFS_volume`

vmkfstools Examples

- To import a virtual disk:

```
vmkfstools -i /path/FileName.vmdk /vmfs/volume
```

You can also import with ESX Server MUI

- To enlarge a virtual disk:

```
vmkfstools -X ###G /path/FileName.vmdk
```

where ###G is the new size of the virtual disk

Virtual Machine Importer

- The VMware virtual machine importer has two modes.
 - The first mode “clones” Symantec (Ghost) images or Microsoft virtual machine files into the virtual hard disk of a new VMware virtual machine.
 - The second mode creates a new VMware virtual machine that accesses Symantec (Ghost) image files or Microsoft virtual hard disk files non-destructively and without creating a copy.

Demo

Virtual Machine Importer

The VMware Virtual Machine Importer is included in Workstation 5.5, or can be run as a separate utility

Usage Scenarios

- Testing
- Backup
- Disaster recovery
- Server consolidation
- Migrate legacy applications
- Fast deployment to virtual environment

Usage Scenarios

Testing

- Virtualize physical systems to create a testing environment.
- Use non-persistent virtual disks for quick rollback from service packs, patches, hot fixes, etc.

Usage Scenarios

Backup Disaster Recovery

- Virtualizing physical systems enables quick and easy server backup and restore.
- Virtualize physical systems to build and test disaster recovery contingency plans.

Usage scenarios

Server Consolidation

Fast Virtual Deployment

Legacy Application Migration

- Virtualize physical systems to consolidate servers onto less, newer hardware, and/or to quickly deploy virtual servers.
- Virtualizing older computers enables legacy applications to be migrated to newer, faster hardware.

Summary

- P2V Assistant and other VMware tools greatly simplify the virtualization of physical computing systems enabling quick and easy server consolidation, legacy application migration, disaster recovery and testing.

P2V Best Practices
Session ID: PAC488

Questions?

- P2V Best Practices: Session ID: **PAC488**
 - www.vmware.com/services
 - Education Services
 - 2 day class
 - “Server Migration using VMware P2V Assistant”

Thank You!

- P2V Best Practices: Session ID: **PAC488**
 - www.wmware.com/services
 - Education Services
 - 4 day class
 - “Virtual Infrastructure 2: Design, Deploy, Diagnose”

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