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Filling gaps in EUC vendor documentation

PvS Master Device – Convert to vDisk

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48 Comments

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PXE Tester 💡

If you will use PXE, download CTX217122 PXEChecker to the master machine.

The TFTP portion won't work unless the client-side firewall is disabled.



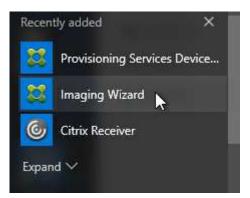
To verify functioning PXE, run PXEChecker, and **Run Test** in **Legacy BIOS** mode. Or you can do a BDM Test (see the article for details).

	PXEChecker
ile Help	
Control Select Test to Run: Legacy BIOS Test D BDM Test Run Test Copy to Clipboard	Progress Starting Legacy BIOS Test Sending DHCP request 2 DHCP offers received Offer #1 IP Offered 0.0.0.0 (from PXE) DHCP Server IP: 10.2.2.22 Option 66 - TFTP Server: <null> Option 67 - Bootfle Name: <null> Next Server: 10.2.2.22 Offer #2 IP Offered: 10.2.3.27 DHCP Server IP: 10.2.2.11 Option 66 - TFTP Server: <null> Option 67 - Bootfle Name: <null> Next Server: 10.2.2.11 Option 67 - Bootfle Name: <null> Next Server: 10.2.2.11 Requesting Bootstrap information from PXEService at 10.2.2.22 on port 4011 PXE ACK #1 PXE Service Server IP: 10.2.2.22 Bootfle Name: ardbp32.bin Next Server: 10.2.2.22 Saving file ardbp32.bin as: C:\Users\admin\AppData\Local\Temp\2\tmp4F51.tmp C:\Users\admin\AppData\Local\Temp\2\tmp4F51.tmp saved downloaded succesfully</null></null></null></null></null>
	Alerts
	Type Message
	Success ardbp32 bin successfully downloaded from 10.2.2.22.

Convert to vDisk – Imaging Wizard Method

The Imaging Wizard connects to a Provisioning Services server to create a vDisk and a device. Once that's done, the machine reboots and the conversion process begins. You can also do all of these steps manually.

- 1. In the Provisioning Services Console, create a Store to hold the new vDisk.
- 2. In the Provisioning Services Console, create a device collection to hold the new Target Device. This could be a device collection for Updater machines. The imaging wizard will ask you to enter the machine name for a new target device.
- 3. If the Imaging Wizard is not already running, launch it from the Start Menu.



4. In the Welcome to the Imaging Wizard page, click Next.



5. In the *Connect to Farm* page, enter the name of a Provisioning Services server and click **Next**.

22 Provisioning Services Im	naging Wizard					
Connect to Provisioni	ng Services Site					
Enter the Provisioning Services site server name or IP, port, and credentials. Only stores supported by this server will be available for vDisk assignment.						
Enter Server Details						
Server name or IP:	pvs01					
Port:	54321					
Provide Logon Credentials	s for the Server					
Use my Windows	credentials					
⊖Use <u>t</u> hese creden	tials 43					
<u>U</u> ser name:						
<u>D</u> omain:						
P <u>a</u> ssword:						

6. In the *Imaging Options* page, click **Next** to create a new vDisk. Alternatively, you can select **Create an image file**.

22 Provisioning Services Imaging Wizard
Imaging Options
What task do you want to perform?
Create a vDisk Make a Provisioning Services vDisk from this device's boot hard disk.
 <u>R</u>ecreate an existing vDisk Not available because there are no vDisks assigned to the server.
O Create an image file Make an image file from this device's booted disk, for importing into Provisioning Services.
Copy a hard disk volume to a vDisk volume Not available because there are no vDisks assigned to the server.

7. In the *Add Target Device* page, enter a new unique name for the Target Device.8. Select a **Collection** and click **Next**.

#	Provisioning Services	Imaging Wizard	
	Add Target Device		
	This device is not a me	mber of the site and needs to be added.	
	Target device name:	WIN 10TD00	
		Must be different from the current machine name.	
	Network connection:	Ethernet0, 10.2.2.108, 00-50-56-A2-05-F8	~
		Select the connection that will be used to boot this machine to the server.	
	Collection name:	Collection	~
		Select the site collection that this device will be added to.	

- 9. In the *New vDisk* page, enter a name for the vDisk.
- 10. CSelect a Store and click **Next**. Leave it set to Dynamic and VHDX.

22 Provisioning Services Imaging Wizard						
New vDisk						
The new vDi	sk will be created in the store you select.					
<u>v</u> Disk name:	Win10					
<u>S</u> tore name:	Store - 99.89 GB Free 🗸 🗸 🗸					
	Supported by Server: PVS01					
vDisk <u>t</u> ype:	Dynamic (recommended) ~					
(● VHD <u>X</u> () V <u>H</u> D						

11. In the *Microsoft Volume Licensing* page, select **None** and click **Next**. We'll configure this later when switching to Standard Image mode.

#	Provisioning Services Imaging Wizard
	Microsoft Volume Licensing
	Choose whether the vDisk is to be configured for Microsoft KMS or MAK volume license management
	None
	○ Key Management Service (KMS)
	<u>Multiple Activation Key (MAK)</u>

12. In the *What to Image* page, leave it set to **Image entire boot disk** and click **Next**.

🞇 Provisioning Services Imaging Wizard					
	What to Image				
	Choose what to image.				
	Image entire boot disk				
	\bigcirc Choose partitions to image and optionally increase volume size				

13. In the Optimize Hard Disk for Provisioning Services page, click Next.

#	Provisioning Services Imaging Wizard
	Optimize Hard Disk for Provisioning Services
	The hard disk has already been optimized for Provisioning Services. Do you want to optimize the disk again?
	Do not optimize the hard disk again
	Optimize the hard disk again for Provisioning Services before imaging
	Edit Optimization Settings
	Note: Citrix recommends that partitions be defragmented before imaging.

14. Shown below are the optimizations it performs.

🗱 Edit Optimization Settings				
Disable Offline Files	Disable Windows Autoupdate			
Disable Defrag BootOptimizeFunction	Disable Background Layout Service			
Disable Last Access Timestamp	☑ Disable Hibernate			
Reduce DedicatedDumpFile DumpFileSize to 2 MB	Disable Indexing Service			
Disable Move to Recycle Bin	Reduce Event Log Size to 64 KB			
Reduce IE Temp File	Disable Clear Page File at Shutdown			
Disable Machine Account Password Changes	Disable Windows SuperFetch			
Disable Windows Defender	Disable Windows Search			
☑ Disable ScheduledDefrag	☑ Disable System Restore			
Disable ProgramDataUpdater	Run NGen ExecuteQueuedItems (new window)			
	OK Cancel			

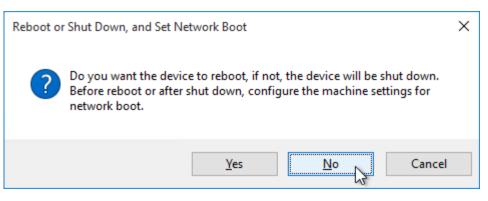
15. Then click **Create**.

Provisioning	g Services Imaging Wizard	
Summary		
Confirm that	all settings are correct.	
Task: Crea Target dev Network co Collection: vDisk name Store: Stor Format: VH	ice name : WIN10TD00 nnection : Ethernet0, 10.2.2.108, 00-50-56-A2-05-F8 Collection :: Win10	^
<		>
Status:	Ready to Start	
Progress:		

16. Don't reboot yet. Review the following issues to determine if they apply. Then configure the virtual machine to boot from the network (PXE) or boot from an ISO as detailed soon.

🗱 Provisionin	g Services Imaging Wizard	×	
Restart No	eded		
	e restart, configure the machine settings for network boot. restart, the Imaging Wizard will continue.		
Task: Crea Target dev Network co Collection: vDisk name Store: Stor Format: VH	vice name : WIN10TD00 onnection : Ethernet0, 10.2.2.108, 00-50-56-A2-05-F8 Collection e: Win10		
		~	
<		>	
Status:	Successful!		
Progress:			
	Log Continue	Cancel	

17. When asked to reboot, click **No** to shutdown the machine. This gives you time to reconfigure the machine to boot from the network or ISO.



18. If you look in the Provisioning Services console, you will see a new vDisk in Private Image mode. Currently there is nothing in this vDisk.

x		Prov	isionin	g Services C	onsole			
🗱 <u>F</u> ile <u>A</u> ction <u>V</u> iew <u>W</u> indov	🗱 <u>F</u> ile <u>A</u> ction <u>V</u> iew <u>W</u> indow <u>H</u> elp							
🗢 🄿 📶 🚺 🖬								
😫 Provisioning Services Console	Name	Site	Con	Size	Mode	Class		
⊿ 🛂 PvSFarm (localhost)	Win10	Site	0	40,959 MB	Private			
þ 遇 Sites								
Views						2		
⊿ 🚰 Stores						.0		
🔚 Store								

19. In a Device Collection you will see a new Target Device record that is configured to boot from Hard Disk and is assigned to the new vDisk.

2	Provisioning Services Console							
🔀 <u>F</u> ile <u>A</u> ction <u>V</u> iew <u>W</u> indov	w <u>H</u> elp							
🗢 🔿 🖄 📰 🛛 🖬								
Console Provisioning Services Console	Name	MAC	Туре	Disk	vDisk			
⊿ 🚼 PvSFarm (localhost)	WIN10TD00	00-50-56-A2-05-F8	Production	Hard Disk	Store\Win10			
⊿ 遇 Sites								
⊿ 🚺 Site					2			
🔁 Servers					2			
😰 vDisk Pool								
⊳ 📴 vDisk Update M								
🔺 🍰 Device Collectic								
Collection								
Nieur	l							

Boot from Network or ISO

- 1. Power off the Target Device.
- 2. If PXE, make sure the target device is on the same network as the Provisioning Server. Or configure DHCP options 66 & 67.

3. For vSphere, edit the settings of the virtual machine and on the **VM Options** tab, in the **Boot Options** section, check the box to **Force BIOS Setup**.



4. If booting from an ISO, connect the virtual machine's CD to the PvSBoot.iso.

Virtual Hardware VM Opti	ions SDRS Rules	vApp Options]	
F 🔲 CPU	2	• 0		
Memory	2048	• MB	-	1
🕨 🦾 Hard disk 1	10	GB	•	ĺ
🛛 🛃 SCSI controller 0	LSI Logic SAS			
🕨 📻 Network adapter 1	VM Network			Connected
✓	Datastore ISO Fil	e	•	Connected
Status	Connect At Pow	/er On		
CD/DVD Media	[datastore1] ISO/P	vSBeot.i Brow	se	
Device Mode	Emulate CDROM			ISO/PvSBoot.is
Virtual Device Node	IDE(1:0) CD/DVD	120202020202020202020202020202020202020	*	15671 155000.15
Video card	Specify custom s	ettings	-	6

In VMM, edit the virtual machine properties, switch to the **Hardware Configuration** page and in the **Virtual DVD drive** page assign the ISO from the library.

8	Wit	N7HVPVS01 Properties
General	ave As 🖓 Ne <u>w</u> 🗙 Ben	nave
Status	守 COM 2	Virtual DVD Drive
510105	None Video Adapter	Shannet
Hardware Configuration	Default video adapter	Secondary channel (0) (in use) 🔹
and states	A Bus Configuration	Media
Checkpoints	DE Devices 2 Devices attached	O No media
Custom Properties	WIN7HVPVS01 15:00 GB, Primary	Physical CD or DVD drive:
Settings	Virtual DVD drive	Egisting ISO image:
Actions	G SCSI Adapter 0 0 Devices attached	PvsBootiso Browse.
Servicing Windows	* Network Adapters	To share an image file may require additional configuration.

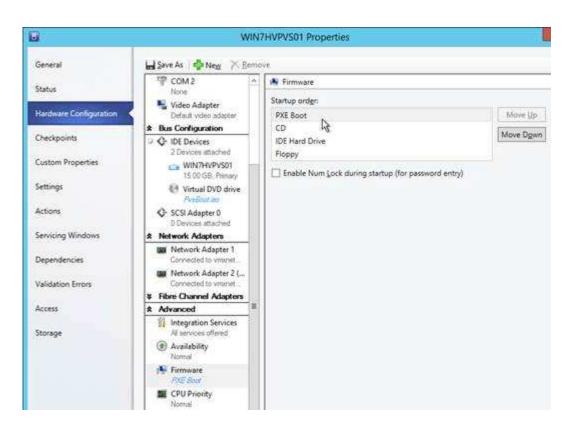
5. If vSphere, power on the virtual machine.



6. If PXE booting, on the **Boot** tab, move **Network boot** to the top.



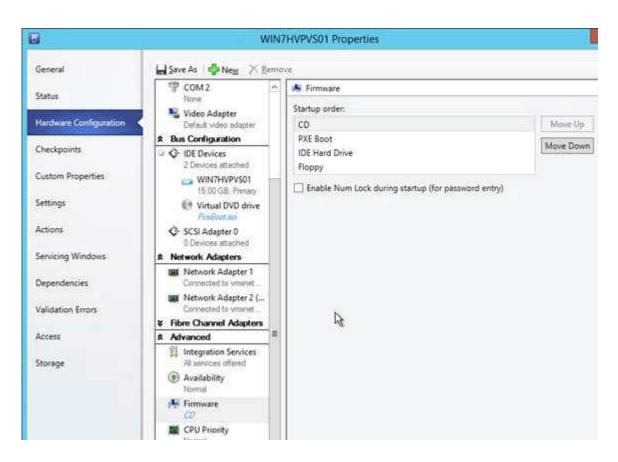
If Hyper-V, on the **Hardware Configuration** > **Firmware** page move **PXE Boot** to the top.



7. If booting from a boot ISO, move **CD-ROM Drive** to the top.



If Hyper-V, on the **Hardware Configuration** > **Firmware** page, move **CD** to the top.



8. If Hyper-V, power on the virtual machine.

_				Virtual	Mac	thine		
<	VM≤	s (5)						
		Name	Stat	tus	-	Virtual M	a –	Availab
	i.	PvSUpdate	Mis	sing		Stopped		
	16	WIN7HVPVS01	-	10.0				
		WNI7HV01		Create				<u></u>
-1	1	WIN7HVM01	0	Shut D	own:			
	b PvSUpdate	U	Power	On	he			
		ASACESSIC .	e	Power	Off	2		

9. Once the machine has booted to Provisioning Services (PXE or ISO), login and the conversion wizard will commence. It will take several minutes so be patient.

maging is li	ely to take a long time.		
Task: Imag	Site: Server: pvs01, Port: 543 e created vDisk isk: Store\Win10	21	
K			>
	Copying (System Reserved)		
Status: Progress:			

10. When done, click **Done**. It might prompt you to reboot. Reboot it, log in, and then shut it down.

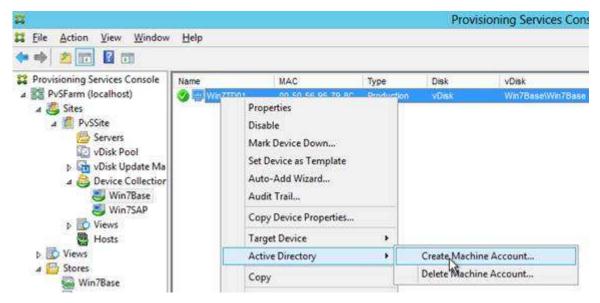
Provisioning	y Services Imaging Wi	zard)
Finished					
The log of t	e processing done can l	be viewed by clicking t	he Log button.		
Task: Imag	Site: Server: pvs01, Po e created vDisk isk: Store\Win10	ort: 54321			^
4					>
Status:	Successful!				
Progress:					
				£	
				Log	Done

Master Target Device – Join to Domain

Provisioning Services must learn the password of the Target Device's Active Directory computer account. To achieve this, use the Provisioning Services Console to create or reset the computer account.

Note: Creating, Resetting, and Deleting Target Device computer objects in Active Directory must be done from inside the Provisioning Services Console. Do not use Active Directory Users & Computers to manage the Target Device computer account passwords. Provisioning Services will automatically handle periodic (default 7 days) changing of the computer passwords.

1. In the Provisioning Services Console, right-click the Target Device, expand **Active Directory** and click **Create Machine Account**.



2. Select the correct OU in which the Active Directory computer object will be placed and click **Create Account**.

Domain:	corp.local
Organization unit: Devices:	XenDesktop
Target Device Win7TD01	Status

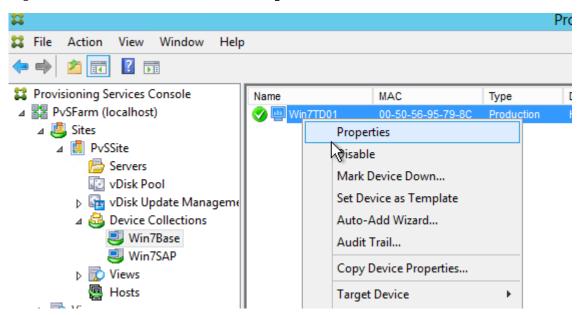
3. Then click **Close**.

	Create Machine Accounts in Active Directory
Domain:	corp local
Organization unit:	XenDesktop
Devices:	
Target Device	Status
Win7TD01	Success

Boot from vDisk

1. In the Provisioning Services Console, go to the Device Collection.

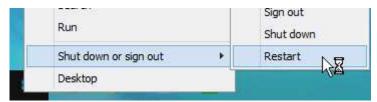
2. Right-click the new device and click **Properties**.



3. On the *General* tab, set **Boot from** to **vDisk**.

		Target Device Properties
General	vDisks	Authentication Personality Status Logging
Nam	ie:	Win7TD01
Des	cription:	
Туре	e:	Production V
Boo	t from:	vDisk v
MAC	2	00 - 50 - 56 - 95 - 79 - 8C
Port	:	6901 🗘
Clas	s:	
	Disable t	his device

4. Restart the Target Device.



5. At this point it should be booting from the vDisk. To confirm, by your clock is an icon that looks like a disk. Double-click it.



6. The **General** tab shows it booting from vDisk and the Mode = Read/Write.

2		Virtual Disk Status	×
General	Statistics		
Virtua	I Disk Informa	ation	
Stat	us:	Active	
Serv	ver:	192.168.123.22 : 6920	
Boot	t From:	vDisk	
Virtu	ial Disk:	RDSH2012R2.vhd	
Mod	le:		
vE	Disk: Read/W	/nte	

vDisk – Save Clean Image

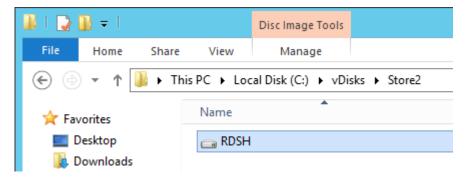
If you have not yet installed applications on this image, you can copy the VHD file and keep it as a clean base image for future vDisks.

- 1. If this vDisk is in Private Image mode, first power off any Target Devices that are accessing it.
- 2. Then you can simply copy the VHD file and store it in a different location.

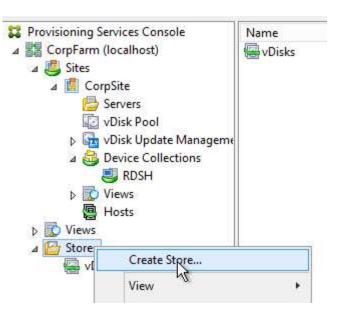
🏭 l 🕞 🔝 = l	Disc	: Image Tools	
File Home Share	View	Manage	
🗲 💿 🔻 🕯 🕨 Tł	nis PC 🕨 Local Di	sk (C:) ► vDisks ► Store ►	
🔆 Favorites	Name	•	Date mo
🔤 Desktop	퉬 WriteCach	10/15/20	
🗼 Downloads	RDSH.lok	10/15/20	
🔚 Recent places	RDSH.pvp	10/15/20	
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	RDSH RDSHv RDSHv RDSHv	Mount Open with Restore previous versions Send to Cut	9/201 9/201 9/201 9/201
		Copy Create shortcut	

If you later need to create a new vDisk, here's how to start from the clean base image:

1. Copy the clean base image VHD file to a new folder.



2. In the Provisioning Services Console, create a new Store and point it to the new folder.



3. Give the new Store a name.

Store P	roperties
General Servers Paths	
Name:	
Store2	
Description:	
Site that acts as the owner of this store:	
<none></none>	~

4. On the **Servers** tab, select all Provisioning Services servers.

Store Properties	x
General Servers Paths	
Site: Corp Site	~
Servers that provide this store:	

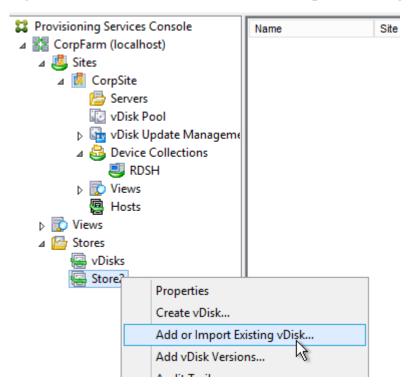
5. On the **Paths** tab, enter the path to the new folder. Click **OK**.

Store Prop	perties ×
General Servers Paths	
Default store path: C:\wDisks\Store2	
Default write cache paths:	
	Add

6. Click **OK** when asked to create the default write cache.

Write Cache Path
You have not selected any default write cache paths. All write caches will be placed in C:\vDisks\Store2\WriteCache.
OK

7. Right-click the new store and click Add or Import Existing vDisk.



8. Click Search.

ite to which the vDisk(s) w	ill be added:
CorpSite	
Store to search:	
Store2	
Server to use for searching:	
PVS01	
Search	

9. Click **OK** if prompted that a new property file will be created with default values.

Provisioning Services Console
A Warning RDSH
Property file is missing for RDSH. It will be automatically created with default values.
ОК

10. Click Add.

Add or Import Existing vDisks
Search a store for new vDisks
Site to which the vDisk(s) will be added:
Corp Site 🗸
Store to search:
Store2 V
Server to use for searching:
PVS01 V
Search Add checked vDisks to the vDisk Pool
RDSH
Enable load balancing for these vDisks
Add Select All Clear All

11. You can now assign the new vDisk to an Updater Target Device and install applications.

KMS

This only needs to be done once. More information at http://support.citrix.com/article/CTX128276.

- 1. Open Provisioning Services Server: In the Console, right-click on the virtual disk and select **Properties**.
- 2. Click on the Microsoft Volume Licensing tab and set the licensing option to **None**.
- 3. Start the Updater device off vDisk in Private Image mode.
- 4. Rearm the system for both Windows and Office, one after the other.
 - a. For Windows Vista, 7, 2008, and 2008R2: Run cscript.exe slmgr.vbs -rearm
 - b. For Office (for 64-bit client): C:\Program Files(x86)\Common Files\Microsoft shared\OfficeSoftwareProtectionPlatform\OSPPREARM.EXE
 - c. For Office (for 32-bit client): C:\Program Files\Common Files\Microsoft shared\Office-SoftwareProtectionPlatform\OSPPREARM.EXE
- 5. A message is displayed to reboot the system, DO NOT REBOOT- Instead, run sealing tasks and then shut down the Target Device.

Note: After streaming the vDisk to multiple Target Devices, Administrators can validate that the KMS configuration was successful by verifying that the CMID for each device is unique.

- For Windows Vista, 7, 2008, and 2008R2: Run cscript.exe slmgr.vbs –dlv
- For Office: Run C:\Program Files\Microsoft Office\Office14\cscript ospp.vbs /dcmid

Also see *Demystifying KMS and Provisioning Services* – <u>http://blogs.citrix.com/2014/05/01/demystify-</u>ing-kms-and-provisioning-services/

And Ingmar Verheij Citrix PVS: Enabling KMS licensing on a vDisk

vDisk – Seal

Do the following sealing steps every time you switch from Private Image mode to Standard Image mode.

1. Run antivirus sealing tasks.

- Sophos: refer to http://www.sophos.com/en-us/support/knowledgebase/12561.aspx.
- Symantec: Run a full scan and then run the Virtual Image Exception tool http://www.symantec.com/business/support/index?page=content&id=TECH173650
- Symantec: see the Provisioning Services script at http://www.symantec.com/business/sup-port/index?page=content&id=TECH123419
- Trend Micro: See VDA > Antivirus for links to Trend Micro documents.
- 2. Citrix Blog Post <u>Sealing Steps After Updating a vDisk</u> contains a list of commands to seal an image for Provisioning Services.
- 3. Citrix Blog Post <u>PVS Target Devices & the "Blue Screen of Death!" Rest Easy. We Can Fix That</u> has a reg file to clear out DHCP configuration. 💡
- 4. Shut down the target device.

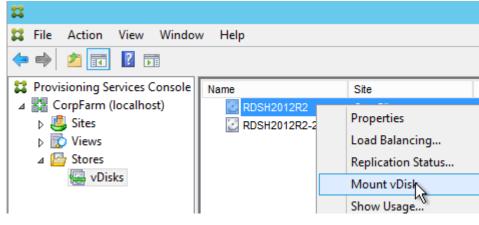
	Search		Sign out	
<	Run		Shut down	
	Shut down or sign out	•	Restart	hr
	Desktop	1	01	A
		~		

Defrag the vDisk

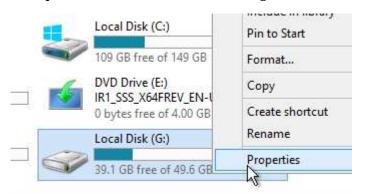
In the Citrix Blog Post Size Matters: PVS RAM Cache Overflow Sizing, Citrix recommends defrag-

menting the vDisk.

1. While still in Private Image mode, right-click the vDisk and click Mount vDisk.



2. In Explorer, find the mounted disk, right-click it and click **Properties**.



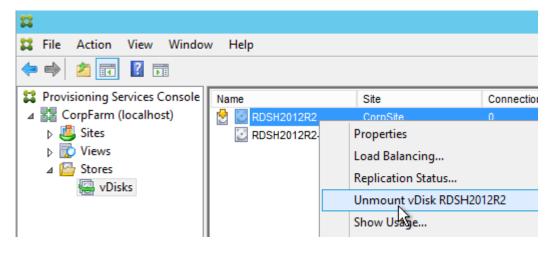
3. On the **Tools** tab, click **Optimize**.



4. Highlight the mounted drive and click **Optimize**.

ou can optimize your dri ptimized. Only drives on tatus			ly, or analyze them to find out if they need to be
Drive	Media type	Last run	Current status
🛻 (C:)	Hard disk drive	Never run	OK (0% fragmented)
wDisks (D:)	Hard disk drive	Never run	OK (0% fragmented)
System Reserved (F:)	Hard disk drive	Never run	OK (0% fragmented)
💼 (G)	Hard disk drive	Never run	OK (0% fragmented)
System Reserved	Hard disk drive	Never run	OK (0% fragmented)

5. When done, back in Provisioning Services Console, right-click the vDisk and click **Unmount vDisk**.



Standard Image Mode

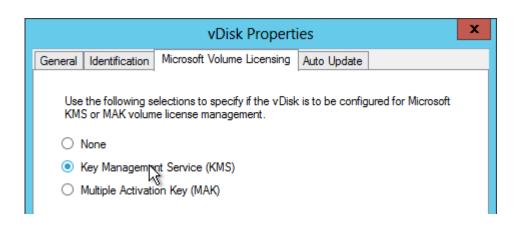
1. In the Provisioning Server Console, go to the vDisk store, right-click the vDisk and click **Prop***erties*.

#										
#	<u>F</u> ile	<u>A</u> ction	<u>V</u> iew	<u>W</u> indow	<u>H</u> elp					
(2	? 5	I						
		sioning Se				Name			Site	
⊿	📲 P\	/SFarm (lo	calhost	:)		💽 Win	7Base		PvSSite	
	⊿ 😃	Sites						Prope	rties	
	⊳	🚦 PvSS	Site					Load	Balancing	
	Þ 🔣	Views							-	
	⊿ 📔	7 Stores						Replic	ation Status	
		🖳 Win	7Base					Moun	nt vDisk	
		🖶 Win	7SAP					Show	Usage	
								Mana	ae Locks	

- 2. On the **General** tab, change the *Access Mode* to **Standard Image**.
- 3. Set the *Cache Type* to **Cache in device RAM with overflow on hard disk**. Don't leave it set to the default cache type or you will have performance problems. Also, every time you change the vDisk from Standard Image to Private Image and back again, you'll have to select **Cache in device RAM with overflow on hard disk**.
- 4. Change the **Maximum RAM size** to a higher value. For virtual desktops, set it to 512 MB or larger. For Remote Desktop Session Hosts, set it to 4096 MB or lager. Make sure your Target Devices have extra RAM to accommodate the write cache.

vDisk Properties					
General Identificati	on Microsoft Volume Licensing Auto Update				
Site: Co	pSite				
Store: vD	isks				
Filename: RD	ЭSH				
Size: 10 Access mode -	2,400 MB VHD block size: 2,048 KB				
	Standard Image (multi-device, read-only access)	-			
Cache type:	Cache in device RAM with overflow on hard disk	-			
Maximum RAM	size (MBs): 64 🗘				

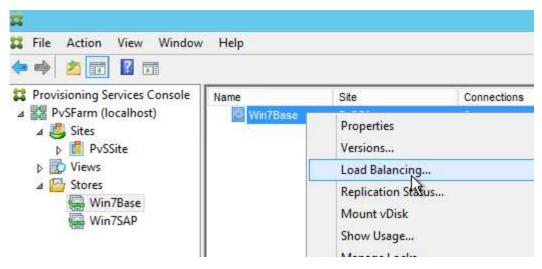
5. On the **Microsoft Volume Licensing** tab, select **Key Management Service** and click **OK**. If you get an error, it's because your service account is not a local administrator on the Provisioning Server.



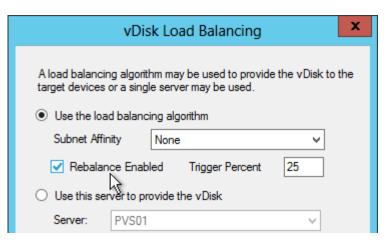
For more information about KMS and Provisioning Services, see *Citrix PVS: Enabling KMS licensing on a vDisk*: http://www.ingmarverheij.com/citrix-pvs-enabling-kms-licensing-on-a-vdisk/.

vDisk – High Availability

- 1. *Citrix PVS DFS replication configuration script –* <u>http://virtexperience.com/2012/09/19/citrix-</u>pvs-dfs-replication-configuration-script/
- 2. In the Provisioning Server Console, right-click the vDisk and click Load Balancing.



3. Ensure **Use the load balancing algorithm** is selected. Check the box next to **Rebalance Enabled**. Click **OK**.



4. Go to the physical vDisk store location (e.g. **D:\Win7Base**) and copy the **.vhd** and **.pvp** vDisk files for the new vDisk. Do not copy the **.lok** file.

🔊 I 💽 🛐 = I	W	/in7Base
File Home Share	e View	
⊛ ⊚ → ↑ 퉬 • c	Computer ► vDisks (D:) ► Win7Base ►	
☆ Favorites	Name	Date modi
Desktop	퉬 WriteCache	7/21/2013
🗼 Downloads	Win7Base.lok	7/21/2013
📃 Recent places	Win7Base.pvp	7/21/2013
	👝 Win7Base	7/21/2013
🥽 Libraries	Mount	
Documents	Send to	
🚽 Music	Cut	
Pictures	Сору	
📑 Videos	13	
	Create shortcut	
-	🝋 Delete	

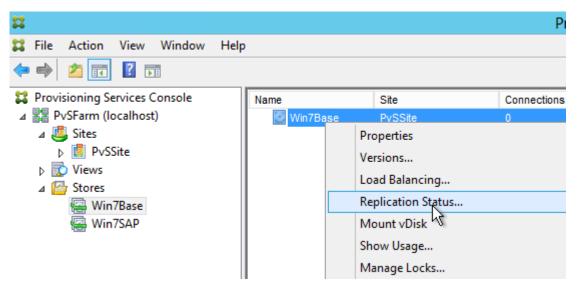
5. Go to the same path on the other Provisioning Server and paste the files. You must keep both Provisioning Servers synchronized.

📓 l 💽 📓 = l		Win7B	ase
File Home Share	View		
🗲 💿 👻 🕇 📕 🕨 N	etwork 🕨 pvs	02 ► d\$ ► Win7Base	
🔆 Favorites	Name	*	Date modified
Desktop			This folder is emp
🗼 Downloads 🕮 Recent places		View Sort by	b
🕽 Libraries 📄 Documents 🎝 Music		Group by Refresh Customize this folder	•
E Pictures Videos		Paste Paste shortcut	

Another method of copying the vDisk files is by using Robocopy:

```
Robocopy D:\vDisks \\pvs02\d$\vDisks *.vhd *.avhd *.pvp /b /mir /xf *.lok /xd
WriteCache /xo
```

6. In the Provisioning Service Console, right-click the vDisk and click **Replication Status**.



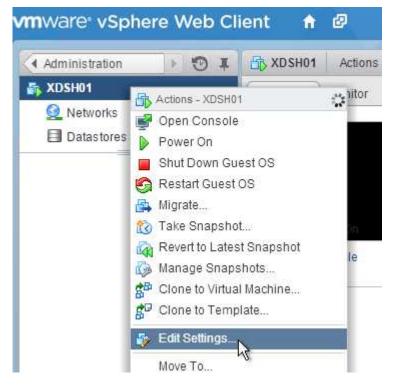
7. Blue indicates that the vDisk is identical on all servers. If they're not identical then you probably need to restart the Citrix PvS Stream Service and the Citrix PvS SOAP Service. Click Done when done.

#	vDisk Re	eplication Status	_ □ ×
		Version	
Server	0		
	Q		
PVS01	•		
PVS02	•		
	N		

Cache Disk – vSphere

Remove the original C: drive from the Master Target Device and instead add a cache disk.

1. Right-click the Master Target Device and click Edit Settings.



2. Select Hard disk 1 and click the x icon. Click OK.

🔁 XDSH01 - Edit	(? H			
Virtual Hardware	VM Options	SDRS Rules	vApp Options	
F 🔲 CPU		2	• 0	
🕨 🌆 Memory		2048	▼ MB ▼	
🕨 🛄 Hard disk 1		50	GB 💌	R
▶ G SCSI controller 0		LSI Logic SA	S	

🔂 XDSH01 - Edit Settings				
Virtual Hardware	VM Options	SDRS Rules	vApp Options	
🕨 🔲 CPU		2	- 0	
Memory		2048	▼ (MB ▼)	
Hard disk 1 Device will		Device will b	e rémoved 🔲 Delete files from datastore 👘	
▶ G. SCSI control	ller O	LSI Logic SA	s	

- 3. Edit the Settings of the virtual machine again.
- 4. On the bottom, click **New device** and select **New Hard Disk**.

Virtual Hardware VM O	ptions SDRS Rules VApp Options	
	2	
🕨 🏧 Memory	2048 Vew Hard Disk	
G SCSI controller 0 Metwork adapter 1	Existing Hard Disk	Connect
6 CD/DVD drive 1 Uideo card	Network s	Connect
Gevice Other Devices	© CD/DVD Drive Floppy Drive	
	 Serial Port Parallel Port Host USB Device USB Controller 	
	SCSI Device	
	SCSI Controller	
New device:	Select 🔹	Add

5. Then click **Add**.

New device:	🛄 New Hard Disk	+	Add	
			54	

- 6. This is your cache overflow disk. 15-20 GB is probably a good size for session hosts. For virtual desktops this can be a smaller disk (e.g. 5 GB). Note: the pagefile must be smaller than the cache disk.
- 7. Expand the newly added disk and select **Thin provision** if desired. Click **OK** when done.

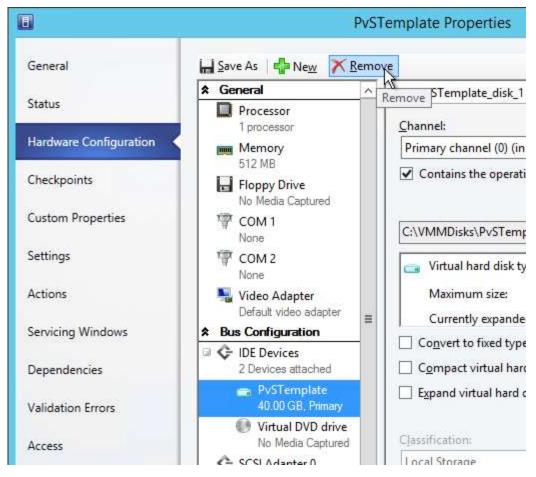
D XDSH01 - Edit Settings				(?)		
Virtual Hardware	VM Options	SDRS Rules	vApp Options			
 Other Devices 						
🕶 🛄 New Hard disk		15	GI	в 🚽		0
Maximum Siz	ze	1.05 TB				
VM storage policy		None			• 0	
Location		Store with th	ne virtual machine	•		
Disk Provisioning			ision lazy zeroed ision eager zeroed sion	d		
Shares	ares Normal 🗟 👻 1000					

- 8. Configure group policy to place the Event Logs on the cache disk.
- 9. Boot the Target Device and Verify the Write Cache Location.

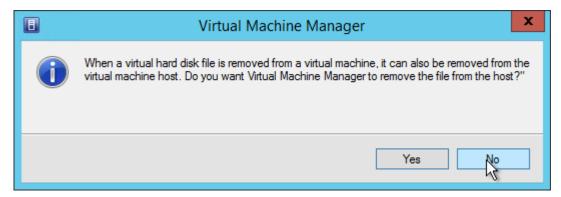
Cache Disk – Hyper-V

Remove the original C: drive from the Target Device and instead add a cache disk.

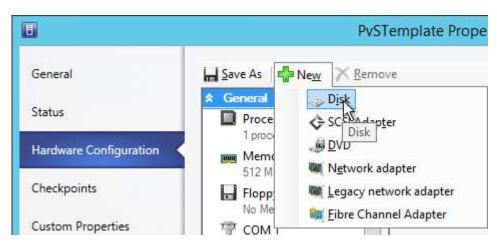
1. Edit the settings of your Provisioning Services master virtual machine and remove the existing VHD.



2. Make a choice regarding deletion of the file.



3. Create a new **Disk**.



4. This is your cache overflow disk. 15-20 GB is probably a good size for session hosts. For virtual desktops this can be a smaller disk (e.g. 5 GB). Note: the pagefile must be smaller than the cache disk. Click **OK** when done.

0	PvSTemplate Properties			
General	🔚 Save As 🛛 💠 New 🗙 Rem	ove		
	A General	PvSTemplate_disk_1		
Status	Processor	Channel:		
Hardware Configuration	Memory	Primary channel (0) (in use) Disk: O Use an existing virtual hard disk Create a new virtual hard disk		
Checkpoints	512 MB Floppy Drive No Media Captured			
Custom Properties	1 COM 1			
Settings	None P COM 2 None	 Pass through to physical drive on host Use a local virtual hard disk available on the host 		
Actions	Video Adapter Default video adapter	Contains the operating system for the virtual ma		
Servicing Windows	A Bus Configuration	Type: Dynamic y		
Dependencies	DE Devices 2 Devices attached	Size (GB): 15		
Validation Errors	PvSTemplate_dis 40.00 GB, Primary	File name:		
Voligation Eners	Virtual DVD drive	PvSTemplate_disk_1		
Access	No Media Captured	Example: data_disk		

5. Configure group policy to place the Event Logs on the cache disk.

Verify Write Cache Location

- 1. Boot the virtual machine and ensure everything is working.
- 2. Open the Virtual Disk Status window by clicking the icon in the system tray. Make sure **Mode** is set to **device RAM with overflow on local hard drive**.



3. If it says **server** then follow the next steps.

		Virtual Disk Status	
General	Statistics		
- Virtua	l Disk Informat	on	
State	US:	Active	
Serv	ver:	192.168.123.22 : 6930	
Boot	From:	vDisk	
Virtu	al Disk:	RDSH.vhd	
Mod	le:		
vE	Disk: Read Onl	y, CacheType: <mark>s</mark> erver	
		k	
Versio	n .	2022	

a. Format the cache disk with NTFS. Only MBR is supported. GPT will not work.

A1758 (2775)	Disk Management				
File Action Vie	w <u>H</u> elp				
🏟 📰 🚺	i 🖬 🕑 📽 I	1			
Volume	Layout	Туре	File System	Status	Capacity
🗈 (C:)	Simple	Basic	NTFS	Healthy (B	49.66 GB
Cache (E:)	Simple	Basic	NTES	Healthy (P	4.00 GB
System Reserve	d (G:) Simple	Basic	NTES	Healthy (S	350 MB
Disk 0					
	Cache (E:) 4.00 GB NTFS Healthy (Primary	Partition)	R		
Disk 0 Basic 4.00 GB	4.00 GB NTFS	Partition)	R		
Basic 4.00 GB Online	4.00 GB NTFS	/e (C:) 49.66 G			0.00 GB nallocated

b. Make sure the pagefile is smaller than the cache disk. If not it will fail back to server caching.

Virtu	al Memory
Automatically manage pa Paging file size for each dri Drive [Volume Label]	aging file size for all drives ve Paging File Size (MB)
C:	4095 - 4095
D: [Data]	None
Selected drive: C: Space available: 272	79 MB
Custom size:	
Initial size (MB): 40	95
Maximum size (MB): 40	95
O System managed size	
○ No paging file	Set
Total paging file size for all	drives

4. After fixing the problem and rebooting, the Cache Type should be **device RAM with overflow on local hard drive**.

1		Virtual Disk S	tatus	
General	Statistics			
Virtua	I Di <mark>sk Informat</mark>	ion		
Status:		Active		
Server:		192.168.123.22 : 6928		
Boot From:		vDisk		
Virtu	al Disk:	RDSH.vhd		
Mod	le:			
v	Disk: Read On	ly, Cache Type: device RA	M with overflow on local hard drive	
Cache Size:		40,344 MB	2	
Cache Used:		67 MB (0	%) ~~	

5. To view the files on the cache disk, go to Folder Options and deselect **Hide protected operat**ing system files.

		Folder Options	
General	View	Search	
Folde	er views		
1		fou can apply this view (such as Details or Icons) all folders of this type.	to
2.17		Apply to Folders Reset Folders	
Advan	ced setti	ngs:	
📕 Fil	es and F	olders	^
	10 C Z S	s show menus	
S-171	E- 10:00 M	y file icon on thumbnails y file size information in folder tips	
Ē		y the full path in the title bar	
1	Hidder	n files and folders	
	O Do	on't show hidden files, folders, or drives	
	- 772.232	ow hidden files, folders, and drives	
	4 -00.000000	mpty drives	
		atensions for known file types	
	4 -11-11-11-11	older merge conflicts rotected operating system files (Recommended)	5
	1.000	receive operating system nes (necommended)	M.

6. You'll see the pagefile and the **vdiskdiff.vhdx** file, which is the overflow cache file.

	🔟 🗢 🗌	Drive Tools	
File	Home Sh	are View Manage	
• •) - 1 🖬	This PC 🔸 Cache (D:) 🔸	
🔆 Fav	vorites	Name	Date modified
Desktop Downloads Execent places		SRECYCLE.BIN	10/15/2014 5:59 P
		pvsvm	10/15/2014 5:57 P
		System Volume Information	10/15/2014 5:58 P
		💿 dedicateddumpfile.sys	10/15/2014 6:09 P
		pagefile.sys	10/15/2014 6:09 P
		🧰 vdiskdif.vhdx	10/15/2014 6:19 P

Related Pages

- Create Target Devices
- Back to Provisioning Services



🗰 March 7, 2015 🔺 Carl Stalhood 🖙 Provisioning Services

48 thoughts on "PvS Master Device - Convert to vDisk"



October 9, 2016 at 10:55 am

Hi Carl, for symantec AV do you recommend or seen any setup with redirecting the virus definitions to another drive other than C drive, since PVS is involved and streaming? I was thinking of creating another drive (other than the write cache disk) on the template as to redirect virus definitions there so that the machines aren't redownloading them at reboot each time until an update to vdisk is done. What do you think?



August 30, 2016 at 5:04 am

Hi Carl,

We want to have two different Windows 7 Desktops

One for our Systems Team – giving them the ability to install applications – That would be persistent – static VM which would require a PvD drive (We can only use B,K,O or U as P: is already in use, would that be ok)

Our users to have 1-1 non-persistent – do we need a PvD drive is we don't want them to install applications and for us to control it via Master Image?

Do we create the PvD drive before we install VDA Agent and then the PVS Software?

Can the VDA be 7.6 LTSR, while the pvs target software is 7.1

Per machine looking to do WBC (10GB) and PvD (15GB) – is that enough?



Rikesh

August 30, 2016 at 6:00 am

Apologies I mean can the VDA be 7.6 LTSR CU1 and the PVS Target be 7.6.2, our PVS Servers are still behind on 7.6.0.5019

Or do we have to keep them all on the same version, so VDA 7.6.5026. PVS 7.6.5019



Carl Stalhood 🛓

August 30, 2016 at 7:15 am

PvS servers must be upgraded before you upgrade the Target Device Software.

The VDA software can be upgraded any time since there's no official connection between PvS and XD other than the XD Setup Wizard in the PvS Console.



Carl Stalhood 🛔 August 30, 2016 at 7:17 am The PvD drive is created by the XenDesktop Setup Wizard. See <u>http://carlweb-ster.com/citrix-xendesktop-7-7-provisioning-services-7-7-and-the-xendesktop-setup-wizard-with-write-cache-and-personal-vdisk-drives/</u>

Before you start using PvDs, make sure you know how to back them up, replicate them, and restore them.

For virtual desktops, your sizes are probably fine.

Rikesh September 6, 2016 at 5:48 pm

Thanks Carl, always a big help

How do you replicate, backup and restore them?

I followed websters guide, createf the drives as stub holders. But not create the simple volume and left unallocated.

Ran xendesktop wizard successfully for 3 provisioned machines, the storages for wbc and pvd are created.

Where do I set the paging files? On the master image still in standard mode? Will i need to create the simple volume now on the master image or leave it unallocated as the article shows?



Carl Stalhood 🛓 September 6, 2016 at 5:50 pm

You'll have to figure out a way to backup and restore PvDs. This is one reason I'm not a fan of PvD.

PvS will move the pagefile to the cache disk automatically. But make sure the pagefile is smaller than the cache disk.



Rikesh

September 6, 2016 at 7:31 pm

Thanks

Do I have to do it in the master image or individually on each target device?

My master image hasn't allocated the D:, there is 10gb but not created as simple volume as websters guide?

Any reason why he leaves both drives unallocated?

Do I need to put it in standard mode> allocate volume and page file to D:?



Carl Stalhood 🛓

September 6, 2016 at 8:12 pm

If pagefile is on C:, PvS will move it to D: automatically, assuming it can fit in D:. You're welcome to boot a Maintenance Version (Private Mode) vDisk and manually configure the pagefile settings.



August 25, 2016 at 2:21 am

Thanks Carl, This worked just fine and as described.

How can I move a vdisk from one partition to another? We are running out of space and have created a new location to store vdisks.



Carl Stalhood 🛓 August 25, 2016 at 6:12 am

In PvS console, just point your vDisk store to the new location.



Sara

August 16, 2016 at 3:38 pm

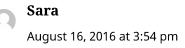
Hello Carl, here's a fun question. Is it advisable to do an offline defrag when a vdisk is in maintenance and not private mode? Both allow writes, but citrix seems unclear on the distinction with regards to an offline defrag. Getting downtime to do private mode is very hard, so being able to merge a vdisk into maintenance and doing an offline defrag would be best. Any advice? Congrats on the great blog.



Carl Stalhood 🛔

August 16, 2016 at 3:44 pm

Wouldn't defragging a snapshot just make it bigger?



I agree. But I mean putting the vdisk into a merged base state in maintenance mode and doing an offline defrag. Does that help shed any light on recommendations?



Carl Stalhood 🛓

August 16, 2016 at 3:59 pm

Merged base is no longer a snapshot so that should be fine. I can't remember if it lets you mount a merged base. Another option is to defrag it and import it as a new vDisk.



Tim

August 12, 2016 at 10:43 am

Hi Carl,

During the "seal" steps it is recommended to stop the DHCP Client service and import the regkey to clear the DHCP config.

However, as soon as the DHCP service is stopped, the connection with the PVS server (and vDisk) is lost, and the server stops responding.

If the regkey alone is imported without stopping DHCP, the values in the registry are not added.

Any advise on this?



Sarah

July 13, 2016 at 9:12 pm

Hey Carl, after you switch your first target device to boot from the vdisk (which

now still has the hard disks attached), What are the recommended steps to do with the target device? Make it into a template? Clone it to an update machine? Thank you sir!



Carl Stalhood 🔒 July 13, 2016 at 9:25 pm

Did you follow the steps to change it to Standard Image mode and enable HA? Then you can follow http://www.carlstalhood.com/pvs-create-devices/



mike harvey

June 17, 2016 at 1:46 pm

I use 4096mb ram as overflow out of 20GB memory with 25gb write cache with no issues

Tyus

June 16, 2016 at 3:30 pm

Carl,

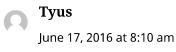
What would be the recommended "Maximum RAM Size" for PVS Ram with overflow on hard disk? Using Server 2008 R2. Currently set at 2048MB but im noticing its filling up quite fast after reboots.



Carl Stalhood 🔒

June 17, 2016 at 5:16 am

Are you referring to the target devices (vDisk)? For RDSH, I normally set it to 4 GB or higher. More RAM = less IOPS. Citrix has found around 4 GB to reduce IOPS by 90%.



Yes. Target device RAM Write Cache is what im referring to. Using 2008 R2 servers as RDSH. But only using 2GB

Vincent Lalande

March 24, 2016 at 3:09 pm

Hey Carl, I read religiously your blogs, and they are very helpful..

I'm trying to setup PvS 7.8 for the first time... Everything was going well until I tried to capture my master image (2008 R2, vSphere, EFI, hardware version 10, VMXNET3). My uEFI PXE is working properly, because the VM is redirected to "Citrix Provisioning Services 7.8.0.8001 UEFI streaming). I get an address by DHCP, but the VM stays "stuck" on "connecting to 10.20.0.74 (the IP of my PVS server)...

Any hints would be appreciated... 🙂

Thx!



Carl Stalhood 👗

March 24, 2016 at 4:03 pm

I haven't tried EFI yet. Not sure it's useful on vSphere. Try posting your question to discussions.citrix.com. The PvS product manager reads the posts there.



Vincent Lalande

March 30, 2016 at 2:40 pm

For an unknown reason, there was a problem with permissions in my SQL database. Rerunning the config wizard (on my PVS servers) solved it... Thx!



Mike K

March 24, 2016 at 8:06 am

Carl –

Your guides have been a godsend. Thank you! A quick question – I see that you've mentioned both booting from Network and ISO options. What are your feelings about configuring with a boot partition? We've configured this in our environment in a test setting and it seems to work well, but I haven't really seen any documentation mention it. As such I'm leery on using it in production until I see it blessed by someone who knows what they're doing.



Carl Stalhood 🛔

March 24, 2016 at 8:10 am

Boot partition works fine but is difficult to change. Basically you'd have to delete and re-create the VMs. Not a big deal.



Trevor Brucker

February 24, 2016 at 2:06 pm

Carl! You saved the day! Thanks for all your documentation and dedication to Citrix



January 27, 2016 at 10:41 am

Hi Carl –

Great site and series of articles! We are just in the process of rolling out XenApp/Desktop 7.6.3 with provisioning services 7.7 (single server). I'm just labing the whole thing out but i'm stuck at Create/Delete/Reset Machine Accounts from AD.

I get the following error when attempting to Create/Delete/Reset Machine Accounts

Failed: Unable to perform the requested Search: Error Code: 0, message: ,provider : LDAP Provider. (21)

Single DC running Windows 2008 R2 (2008 R2 FFL/DFL).

The PVS service account has the following permissions:

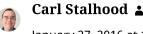
Database – sysadmin PVS Server – Local Admin Citrix Studio – Machine Creation AD – Domain Admin

There doesn't seem to be anything in the event log.

The config should be pretty much identical to what you've documented.

Any thoughts?

Thanks!



January 27, 2016 at 11:26 am

Does your account have permission? It should be using your account, not the service account.



rapidcitygator

January 26, 2016 at 4:33 pm

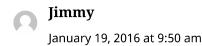
Carl, I'm getting very strange behavior and perhaps you can help. I am working with NVIDIA GRID vGPU on vSphere 6 and PVS 7.6. When I installed the NVIDIA video drivers, I got a black screen on the vSphere Console so my workaround is to use RDP. I will figure out the vSphere Console issue later as that is not my huge concern right now. My problem is the Target Device was created fine. As long as the TD is set to boot from Hard Disk, I can ping and RDP into the virtual machine. When I change it to boot to vDisk, I can no longer ping and I can't RDP. What is strange is it does seem to boot up fine. Its all green check marks in the PVS Console. I verified the IP address it is using through the vSphere Client and the PVS Console. What could be stopping the networking on the TD once I change it to vDisk?



Single NIC?

What OS version? If 2008 R2, did you install 2550978 (pci.sys)? Did you check for ghost NICs?

Is the firewall enabled? Maybe DNS or AD is not working properly so Windows thinks it's not on the domain network and thus enables the Public firewall.



Thanks Carl,

Some Xendesktop sessions freeze intermittently:

Error: provisioning service virtual disk – connection lost

Can last for a few seconds to a minute and then says "provisioning service virtual disk – connection restored"

any ideas?

Curtis December 3, 2015 at 10:13 am

Hi Carl;

Thank you for all you do! Your posts are extremely valuable for small shop Citrix operators such as myself. \bigcirc

I've spent some time Googleing and researching but am having a hard time finding information about block sizes. Maybe it means I don't have to worry about it as much as I am... but when setting up my vDisk storage I had to pick block sizes on my SAN volume, on the NTFS volume, and for the VHD file itself.

Am I fine with 4K default sizes on the SAN and NTFS volume and 2MB on the VHD file? Or could I tweak these and improve my performance? I'm caching on the target devices, not the PVS servers.

Thanks!

Curtis



Carl Stalhood 🛔

December 3, 2015 at 10:17 am

On the PvS server side, I don't think it matters. The PvS server should have enough RAM to cache the vDisk in memory and thus there should be very little disk activity. The only exception is Private Mode vDisks and I only recommend those for image updates. Client-side caching is a different story. You have RAM caching to help with that.



November 9, 2015 at 11:04 am

Hi Carl,

Hope you can help me here.

I have been trying to create a Write Cache disk for the targets but only the Master device can see it.

I have read somewhere prob from Carl Webster that on PVS 7.6 the disk on the Master Image should be left unformatted and that the targets do that on boot, but previously I formatted them but not on PVS 7.6.

I have tried both methods and no joy 🙁

I successfully created PVS disks before for another client but that was on Xenapp 6.5 also and an older version of PVS.

I am going mad here trying to get this to work.

The hyper visor is Xenserver, disk part says disk 0 for cache and disk 1 for streaming.

Hope someone can help Cheers Mike



Carl Stalhood 🛔

November 9, 2015 at 12:49 pm

When you use the XenDesktop Setup Wizard, it automatically adds a cache disk and formats it. If you use the Streamed VM Setup Wizard then I don't think it adds or formats the cache disk. I usually add an empty formatted cache disk to my template and that works.



November 3, 2015 at 4:10 pm

Hi Carl, I keep receiving a "Failed: Unable to save Active Directory change. Ensure the appropriate permissions exist to perform this task..." message when trying to join the device to domain. Do i need my AD rights delegated?



June 6, 2016 at 10:27 pm

Hi Jig,

Is this issue fixed ? i too have the same problem



Vikas Bhatt

July 14, 2015 at 5:46 am

Sir,why havent you used Xen Server as an hypervisor



Carl Stalhood 🛓 July 14, 2015 at 6:13 am

I work mostly with mid-to-large sized enterprises and vSphere is the hypervisor that they use with some of them dabbling in Hyper-V. I think Carl Webster has PvS instructions that are more specific to XenServer.



Matheen

June 30, 2015 at 4:26 am

Hi Carl

I am testing PVS 7.6 in my test lab on VMware workstation 11. I was able to create 2012R2 vDisk successfully but when trying to boot from the vDisk, the streaming does not happen. I was able to network boot the target and the target can find the PVS server and got the vDisk found message but is not proceeding afterwards. I tried

Changing the network adapter from e1000 to vmxnet3 Changed the hard disk and CD drive from SATA to IDE and removed IDE before vDisk creation

I have enabled PVS server logging into Eventviewer and could not find any error in the PVS server.

I am wondering how to proceed on this. Appreciate your assistance.



Carl Stalhood June 30, 2015 at 6:00 am

I suspect that Workstation is not supported for PvS and I have no experience with it. You can try searching or posting at discussions.citrix.com



June 2, 2015 at 8:29 am

Hi Carl, As usual Excellent Article.

I am trying PVS in my single host Hyper-V lab. I have XA 7.6 Master VMs and targets are created manually on hyper-v (No SCVMM. What I am finding is that my targets have their write cache going to server (checked the WC partition is formatted with MBR) even though the vDisk is configured with 'RAM with overflow to disk'

1. Is it possible to create 2 or 3 targets manually from the master VM (without using SCVMM) that will use RAM cache with overflow to disk as WC location? if yes please let me know how this can be done?

2. In my PVS server, I cannot power manage (start or shutdown) the devices. How would I configure PVS to power manage VMs in the hypervisor?



Carl Stalhood La June 2, 2015 at 1:28 pm

1. Make sure the pagefile is smaller than the cache disk. Also, make sure the cache disk is formatted with NTFS partition. The XenDesktop Setup Wizard can do this for you or make sure your template has formatted disk.

2. I'm guessing Hyper-V doesn't support Wake-on-LAN. But once the targets are booted you can send them a shutdown command from PvS console assuming the TD Agent is running.



Tyron Scholem

May 22, 2015 at 10:05 am

Great tutorial! The only problem I have is on "Verify Write Cache Location", step 3a, my target device from which I created the golden image recognizes write cache disk as #1, not zero. Due to that, it keeps writing cache to PVS server. If I create new target devices, they are good to go. I guess I attached the write cache disk before capturing the image, and that screw up my target device. Is there an easy way to invert the disk numbering?



Carl Stalhood 🛓

May 22, 2015 at 10:34 am

What hypervisor? In vSphere, you can power off the VM, edit the settings, and you can change the SCSI from 0:1 to 0:0. When creating the PvS template, I always clone the original VM so the hardware is as identical as possible.



mike harvey

June 7, 2016 at 12:10 pm

It's a similar thing with xenserver as above

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