

Configuring a VEEAM off host backup proxy server for backing up a Windows Server 2012 R2 Hyper-V cluster with a DELL Compellent SAN (Fiber Channel)

Introduction

This white paper describes how to configure a VEEAM Off host backup proxy server for backing up a Windows Server 2012 R2 Hyper-V cluster that uses a DELL Compellent SAN with VEEAM Backup & Replication 7.0. The protocol used here is Fiber Channel. This has following benefits:

- You leverage the hardware VSS provider of the Compellent Replay Manager for snapshots. This avoids time out issues on heavy IO CSV or some of the bugs related to software snapshots of Hyper-V CSVs on Windows Failover Cluster nodes that have ODX enabled.
- You off load the backup process from the Hyper-V nodes to a separate server. This preserves CPU cycles and network bandwidth associated with the backup process for virtualization workloads.
- Depending on your particular setup you avoid copying data over the network if the backup repository storage is attached directly to the Off Host Backup Proxy.

Environment Used

In this article we use a 2 node Windows Server 2012 R2 Hyper-V cluster with Fiber Channel access to the DELL Compellent SAN. We have a Windows Server 2012 R2 server that serves as a VEEAM off host backup proxyand also has Fiber Channel access to the DELL Compellent SAN. This server also has access over fiber channel to a DELL PowerVault MD3600F with MD1200 JBOD extension bays. VEEAM Backup & Replication runs on Virtual Machine with 12GB of memory, 8 vCPU and a local SQL Server Standard 2012 SP1 database. This virtual machine is actually running on the VEEAM Off host backup proxythat must have the Hyper-V role enabled anyway. Fiber Channel access is over 8Gbps and Brocade 5100 switches. The bottle neck here are the source nodes of the Hyper-V Cluster that "only have 4Gbps" FC cards.

- DELL Compellent SC 6.3.10
- DELL R710, dual socket, 4 core , 48GB of DDR3 memory (off host backup proxy server)
- DELL R720, dual socket, 8 core, 128GB DDR3 memory (Hyper-V nodes)
- Brocade FC switches (5100 series)
- DELL MD3600F with 6 MD1200 JBODs. 2TB 3.5" NL-SAS disks 7.2K RPM

Here's a simplified drawing of the environment







Emulex 8Gbps FC to Compellent + attached to MD3600F & MD1200 (3.5" 7.2K RPM NL-SAS)







Configuration

Preliminary Configuration of the Off Host Backup Proxy

Once we have our Hyper-V clusters and VEEM Backup environment set up we need to configure the Compellent SAN LUNs and the Replay Manager software to make sure the hardware VSS provider is used and the transportable snapshots can be presented to the Off host backup proxy erver.

The following steps are extremely important and cannot be ignored without running the risk of data corruption on your Hyper-V CSVs.

For many system administrators running a Windows Failover Cluster (WFC) the idea of mapping a LUN used for a cluster to another server is disconcerting. Visions of corrupted data & pink slips fly through their heads. A very understandable concern. But the OHBP only needs to be able to see/read the LUN. For that is doesn't to be online for Windows and it is actually very much unwanted! So to make sure that this does not happen we take two actions:

- 1) We set the SAN policy on the OHBP to offline.
- 2) We map the Hyper-V LUNs as read only to the OHBP host.

We'll discuss how to do both these actions below.

Set the SAN policy on the OHBP to offline.

Please note that installing VEEM will set the policy to "OfflineShared" for you. But you have to make sure. I have seen this policy being reverted after a reboot. So to make sure this is correct we set it manually to and reboot the server to check it's active and stays active. See

http://technet.microsoft.com/en-us/library/gg252636.aspx for more information on SAN policy.



I'm actually quite paranoid and I tend to set the SAN Policy to Offline All. Reboot and verify again.







For yet even more added security one can disable automount.

CA.	Administrator: Command Prompt - diskpart					
C:\>diskpart						
Microsoft DiskPart ver	rsion 6.3.9600					
Copyright (C) 1999-201 On computer:	3 Microsoft Corporation.					
DISKPART> automount						
Automatic mounting of	new volumes enabled.					
DISKPART> automount d:	isable					
Automatic mounting of	new volumes disabled.					
DISKPART> _						

Let's do so. Yes this is the "better safe than sorry" approach and I'll take the overhead of managing any LUN presented to this host manually over data corruption!

Configuring DELL Compellent SAN Volume Mappings

Make sure you have the MPIO feature installed on the VEEAM off host backup proxy server just like you do on cluster nodes. Also, just like on your cluster nodes, don't forget to associate the Dell Compellent volumes with the DSM. You can do this via the MPCLAIM CLI. Open an elevated command prompt and type the following:

mpclaim.exe -r -i -d "COMPELNTCompellent Vol"

(-r reboots the server automatically, exclude it to have the option to restart manually). This one-time reboot sets up the associations.

Configuring Dell Compellent Replay Manager Software

Install the Compellent Replay Manager Service

You need to install the Compellent Replay Manager Service on both the Hyper-V cluster nodes and on the VEEAM off host backup proxy server. Do note that you need a license for this software, which is needed later on when you configure this service on the hosts to interact with the Compellent SAN.

Note: before we begin this installation we have already installed the Hyper-V role on the VEEAM off host backup proxy server. This is a prerequisite to use this VEEAM capability and it makes the Compellent Replay Manager Service auto detect to install the Hyper-V Host Extension.





To install the hardware VSS Provider (part of Compellent Replay Manager) you need open up an elevated command prompt (run your command shell as an administrator), navigate to the folder where the software is located and launch the msi.



You'll see the InstallShield wizard pop up, click "Next"



Accept the license agreement and click "Next"





Dell Compellent Replay Manager - InstallShield Wizard	x			
License Agreement Please read the following license agreement carefully.	>			
DELL END USER LICENSE AGREEMENT Ver. 1.3 TYPE-A SOFTWARE	^			
THIS IS A LEGAL AGREEMENT BETWEEN YOU (EITHER AN INDIVIDUAL OR AN ENTITY) AND DELL PRODUCTS L.P. OR DELL GLOBAL B.V. (SINGAPORE BRANCH), ON BEHALF OF DELL INC. AND ITS WORLDWIDE SUBSIDIARIES AND AFFILIATES (COLLECTIVELY, "DEII" OR "DELL"), WHICH GOVERNS YOUR USE OF THE SOFTWARE. THE SOFTWARE SHALL MEAN COLLECTIVELY THE SOFTWARE PROGRAM, THE ASSOCIATED MEDIA, PRINTED MATERIALS, ONLINE OR ELECTRONIC DOCUMENTATION, AND ANY COPIES THEREOF, TO WHICH THIS AGREEMENT IS ATTACHED OR OTHERWISE ASSOCIATED (the "Software" or "SOFTWARE"). PLEASE READ THE TERMS AND CONDITIONS OF THIS	>			
I accept the terms in the license agreement Print I do not accept the terms in the license agreement				
InstallShield				

Either accept the default destination folder or change it and click "Next"

i	Dell Compellent Replay Manager - InstallShield Wizard				
Destination Folder Click Next to install to this folder, or click Change to install to a different folder.					
	Install Dell Compellent Replay Manager to: C:\Program Files (x86)\Compellent Technologies\Replay Manager for Microsoft Servers\				
InstallShield -	< Back Next > Cancel				





The installer auto detects that it needs to install the Hyper-V Host Extension if the Hyper-V role is installed on the server. This is exactly what we want. Click "Next"

🖞 🔹 Dell Compellent Replay Manager - In	nstallShield Wizard
Feature Selection Select the program features you want installed.	E
Click on an icon in the list below to change how a feature is ins	talled. Feature Description Replay Manager extension for application-aware backup and restore of Hyper-V host servers. This feature requires 144KB on your hard drive.
InstallShieldSpace	<u>N</u> ext > Cancel

You need to use a domain account that is a member of the local administrators group on the servers involved. While not strictly necessary for snapshots made on one system it is needed for multi-server setups such as Windows Failover clusters and in our use case the combination of a WFC with a VEEAM off host backup proxy server. Fill out the account and password, click "Next".

😥 Dell Compellent Replay Manager - InstallShield Wizard 🗙						
Change Service Account Specify the domain account the Replay Manager Service will log on as.						
A domain account must be used for cluster communication or to enable copying backup set information to a network share.						
<u>Local System Account</u> This <u>Account</u> :						
Domain\User Name						
DOMAIN\replaymanagerservice						
Password						
••••••						
InstallShield						
< <u>B</u> ack <u>N</u> ext > Cancel						





The wizard is ready to install, kick this off by clicking "Install"

閿	Dell Compellent Replay Manager - InstallShield Wizard
Read The	dy to Install the Program e wizard is ready to begin installation.
Clic	k Install to begin the installation.
If y exi	you want to review or change any of your installation settings, click Back. Click Cancel to t the wizard.
InstallSł	nield < <u>B</u> ack <u>Install</u> Cancel

Let the wizard complete.

岁 Dell C	Compellent Replay Manager - InstallShield Wizard 🛛 🗕 🗖 🗙						
Installing The prog	gram features you selected are being installed.						
P	Please wait while the InstallShield Wizard installs Dell Compellent Replay Manager. This may take several minutes.						
	Status:						
	Starting services						
InstallShield -							
	< <u>B</u> ack <u>N</u> ext > <u>Cancel</u>						





Click "Finish" to close the InstallShield wizard.



After a successful installation of the Replay Manager service you should see these two services running on the hosts.

*			Computer Management			
<u>File Action View Help</u>	p					
🦛 🏟 🙍 🔂 🗟	🛛 🖬 🕨 💷 🕪					
🌆 Computer Managemen	O Services					
a 👔 System Tools	Select an item to view its description	- time	Description	Ci di	Startun Trees	Los On As
Task Scheduler Sch	Select an item to view its description.	Compellent Replay Manager Provider	Compellent Volume Shadow Copy Service (VSS) hardware provider.	Running	Manual	Local System
Event Viewer		Compellent Replay Manager Service	Compellent Replay Manager Service for Microsoft Servers (VSS).	Running	Automatic	
Shared Folders					D: 11.1	
D Local Users and Users		Credential Manager	Provides secure storage and retrieval of credentials to users, applica		Manual	Local System
Performance		Cryptographic Services	Provides three management services: Catalog Database Service, whi	Running	Automatic	Network Service
Cevice ivialiager		COM Server Process Launcher	The DCOMLAUNCH service launches COM and DCOM servers in re	Running	Automatic	Local System
N Windows Server		Cevice Association Service	Enables pairing between the system and wired or wireless devices.		Manual (Trig	Local System
Disk Managemer		Cevice Install Service	Enables a computer to recognize and adapt to hardware changes wi		Manual (Trig	Local System
A Services and Applica		Cevice Setup Manager	Enables the detection, download and installation of device-related s		Manual (Trig	Local System
Routing and Ren		C DHCP Client	Registers and updates IP addresses and DNS records for this compu	Running	Automatic	Local Service
Services		Diagnostic Policy Service	The Diagnostic Policy Service enables problem detection, troublesh	Running	Automatic (D	Local Service
WMI Control		Ciagnostic Service Host	The Diagnostic Service Host is used by the Diagnostic Policy Service		Manual	Local Service
👂 🚅 Message Queuin		Diagnostic System Host	The Diagnostic System Host is used by the Diagnostic Policy Service		Manual	Local System

Important! Verify that you have setup a Windows firewall rule to allow inbound traffic to TCP port 27444 for the Replay Manager service.

You are now ready to configure the hosts in the Dell Compellent Replay Manager Explorer. This is need to allow the Replay manager Services on the host to interact with the Dell Compellent SAN in order to create application consistent VSS based snapshot.





Configure the DELL Compellent Replay Manager Explorer

You should have a server running the DELL Compellent Replay Manager Explorer. We're using the most current Replay manager version at the time of writing which is 7.1.1.1

\odot	About Replay Manager
	Dell Compellent Renjav Manager Explorer
	Version 7.1.1.1
	© 2013 Dell Inc. All Rights Reserved.
	ОК

You need to add the VEEAM Off host backup proxyserver to the Replay manager Explorer and then configure which Compellent SAN or SANs it can access via the Virtual IP address (VIP). This also needs to be done for your Hyper-V nodes of the cluster, the process is similar. Please read the Compellent Replay Manager documentation for more information on this subject. We only walk through the process here to avoid digressing too much.

Server Connecti		
Add Server	License System Configuration	N
	Connect To Server	
Name/IP Address:	VEEAMOHBP	1
Server Alias:	VEEAMOHBP	
	Server Alias does not need to be a valid network location.	

If you have not installed the Replay Manager client, or if you have but the Replay Manager port 27444 is not opened for inbound connections in the Windows firewall you'll get an error:

Connection refused by server
The connection was refused by the server. The address or server name could be wrong, the ReplayManagerService is not running on the machine, or something is blocking the connection to port 27444 on the target machine, such as a firewall.

The fix is easy. Make sure the Replay Manager is indeed installed & running without issues. Then verify that the firewall is configured to allow inbound traffic to port 27444.





After you have added the server you need to activate it by entering your Replay Manager License Key in the "Product Serial Number).

			Replay Manager Explore
Server Connections			
🚽 Add Server	~	License System Configuration Notifications Options	
		Please enter product activation license. Please enter license details below. If you require any assistance please visit http://www support.dell.com/compelient and someone will guide you through the licensing process. Replay Manager must be licensed to enable service functionality. Product Serial Number : Consec Confirmation Activate via Internet Activate via Phone License has been activated for this product.	
Configuration Configure Server Backup Sets Jobs Configure Server Configure			

You can now configure access to the DELL Compellent SAN



http://workinghardinit.wordpress.com





Important! When you add LUNs/CSVs to your cluster and as such to your VEEAM off host backup proxy server you need to update your server configuration!

If all is well you should be able to view the volumes on the server and any Hyper-V guests on that host



To test all is working well you can create a replay manager backup schedule and run it. Make sure to set it a "Copy" (do **not** select "Full VSS backup) so that it will not interfere with any backup software. Please see the DELL Compellent Replay Manager user guide for more information.

Map Hyper-V LUNs as read only to the OHBP host

This protects us against an accident with the above mentioned DiskPart SAN policy and Automount settings. If for some reason the policy gets reset to "OnlineAll" and "automount" gets enabled, you'll see lots of file system related errors but you'll be saved by the SAN blocking any writes. The errors are due to the operating system wanting to write to the online disk but in this scenario that would cause disastrous corruption. As the host can't write to the LUN due to the fact that it's mapped as "read only" to the host in Compellent SAN this is your fail safe. And while the event log might fill with worrying event entries, you are protected.





Properties Map Volume to Server Map Volume to Remote System Remove Mappings from Volume Demote Mappings to Server Cluster Storage Volumes CsV-0S Calendar Statistics Charts Hyper-V Cluster Disks Refiren Set Update Frequency Map Volume to Server Map Volume to Remote System VSS (CSV-0S) Refiren Set Update Frequency Find Map Volume to Remote System Folder Path Storage Profile Map Volume to Server Map Volume to Server Map Volume to Remote System Remote System Remote Mappings from Volume Properties File Servers File Servers Disks Demote Mappings to Server Cluster Nodes Expand Volume Expand Volume Expand Volume E Endosures Replay t Controller Port LUN Read Only Copy 00 55 3 No 00 55 3 No Work to Folder 00 00 55 3 No 00 55 3 No Octop 55 3 No 00 55 3 No 00 55 <td< th=""><th>Storage Managemen</th><th>t 🔍</th><th>View 🏥 Refresh 🛟 Help</th><th></th><th></th><th>r.</th><th>-</th><th></th></td<>	Storage Managemen	t 🔍	View 🏥 Refresh 🛟 Help			r.	-	
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CSV Properties With S Map Volume to Server With S Map Volume to Server With S Map Volume to Server Storage Profiles Map Volume to Remote System Remove Mappings from Volume Person Map Volume Dense Mappings to Server Cluster Nodes Expand Volume Expand Volume Renove Mappings to Server Cluster Nodes Expand Volume Controllers Desks Replay Create Boot From SAN Copy Octop Octop Move to Folder Move to Folder Move to Folder Move to Folder Move to Folder Move to Folder Move to Folder Move to Folder Move to Folder Move to Folder Move to Folder Move to Folder Move to Folder Move to Folder Move to Folder <th colspan="2">Volumes</th> <th>r Disks (General Ma (Refreen</th> <th>OS</th> <th>Mirror/Migrai</th> <th>te Replays Replay (Find 3 Map Volume to S</th> <th>Calendar</th> <th>Statistics Charts Map Volume to Remote Sys</th>	Volumes		r Disks (General Ma (Refreen	OS	Mirror/Migrai	te Replays Replay (Find 3 Map Volume to S	Calendar	Statistics Charts Map Volume to Remote Sys
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Users Create Boot From SAN Copy 00 155 3 No Copy 00 156 3 No Move to Folder 00 156 3 No Delete 00 156 3 No	Disks Controllers UPS Enclosures	⊠ ≫	Replay		▶ t	Controller Port		the second se
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Now your Compellent SAN is a bit concerned about you're data's wellbeing and will notify you that it's already mapped to a remote server or system (a Windows Failover Cluster in our case). Select "Yes (Read Only)".

C	- Map Volume to Server
💠 Back	Quit Advisor
de Back	Warning: Volume CSV-0S is already mapped to a server or remote system. Mapping a volume more than once may cause data corruption or unpredictable results. Volumes are usually mapped to a single server, except for the case of clustering. If you are using clustering, you should create a Server Cluster and map this volume to the cluster. If you are not using clustering, it is recommended that you create a read only mapping.
	Are you sure you want to map this volume again?
	No Yes (Read Only)





Select the VEEAM Off host backup proxyserver and click "Continue"

Back Quit Advisor Select a Server to map: Apple Servers
Select a Server to map:
1) Select the VEEAM Off Host Backup Poxy server
Create Server Ouster

Confirm the details of the volume/LUN to be mapped to the server (your off host backup proxy) and click "Create Now".

c -	Map Volume to Server			
💠 Back 🛛 Qu	it 🕜 Advisor			
Cre	eate mapping betwe	en the following	Volume and Server:	
	Volume:	CSV-0S		
	Server:		VEEAM Off Host Backup Proxy serve	r
			N	
			Advanced	Create Now







The CSV will be mapped to the server running the VEEAM Off host backup proxyrole.

	Refresh 🛟 He	n					
Storage Hanagement of her th	inconcon of the	٣					
💐 Properties 🤌 Map Volume to Ser	rver 🧐 Map Volu	ume to Rem	ote System 🏼 🍠 Remo	ve Mappings from Volume	💭 Demote N	lappings to Server Cluster N	odes 🔯 Ex
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Recycle Bin Servers	⊀ Mapping Status & Up & Up & Up	Details: Type FC FC FC	Server Port	Controller Port	LUN 7 3 5 3 6 3	Read Only No No No	
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Servers S	KappingStatusD UpD Up	Details: Type FC FC FC FC FC FC FC FC	Server Port	Controller Port	LUN 7 3 5 3 6 3 8 3 8 3 6 3 5 3	Read Only No No No No No No No No	

It goes without saying you need to do this for all CSV LUNs of the Hyper-V cluster you want to backup in this fashion. If you look at the properties for the mappings of that server by right clicking it and selecting "Modify Mapping" you'll notice it is indicated that the current mapping is "Read Only"

C - Mod	ify Mapping				
💠 Back 🛛 Quit	2 Advisor				
Select	LUN				
🔄 Map vo	olume using l	LUN 0 (this is usually re	served for boot vol	umes).	
🔳 Use L	UN 255 w	hen mapping the selecte	ed volume to the se	elected server.	
V U	lse the next a	available LUN if the prefe	erred LUN is unava	ilable.	
👬 Restric	t Mapping	Paths			
🔲 Only r	nap usino se	ecified server ports:			
	Туре	Server Port	Status	Connected Controlle	
	FC FC	Constant Bill Bill Bill	Up		
1201	F TC		- Op		
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	4				
🔟 Map to	controller	-	if possible		
Config	ure Multipa	thing			
Maxir	num numbei	of paths allowed: OSI	Default 🔶	OS Default: 32	
Config	ure Volume	Use			
The e	alaatad yaluu	no obsuid he presented	as read ask to the		
M mes	elected volui	ne snouid be presented	as read-only to the	e selected server.	
					Continue

Note: When using Compellent Enterprise Manager GUI the wizard is different. You MUST go into advanced properties and select to map the volume as read only!





Configuration of the Hyper-V Cluster in VEEAM Backup & Replication

We are adding our Hyper-V cluster to the VEEAM Backup & Replication server in Managed Servers under Backup Infrastructure



Fill out the FQDN of the Hyper-V Cluster and click "Next"

	New Hyper-V Server
Hyper-V Name	or IP address of Microsoft Hyper-V server.
Name	DNS name or IP address:
Туре	Hyper-V cluster FQDN Description:
Credentials	Created by at 2/22/2014 6:39:18 PM.
Apply	
Results	
Summary	
	< Previous Next > Enish Cancel





Select the correct option in this case a Microsoft Hyper-v cluster.



Select an account with local admin rights on the cluster nodes and click "Next"

(Note the VEEAM isn't dealing well with global group nested in domain local groups. So we add our domain user VEEAM account to the local admins groups on the servers directly.)

	New Hyper-V Server	x
Hyper-V Credentials	nistrator credentials.	
Name Type	Type in an account with local administrator privileges on the server you are adding. Use DOMAIN\USER format for domain accounts, or HOST\USER for local accounts.	
Credentials	Credentials: \veeam (Created by Add	
Apply	Please wait	
Results Summary	Resolving Hyper-V hierarchy	
	Click Ports to customize network ports to be used by individual components	i
	< Previous Next > Einish Cance	a





Wait until it has resolved the Hyper-V hierarchy ... and then wait for discovery to complete

		New Hyper-	-V Server	x
Hyper-V Apply Please wait while requ	ired operatio	ons are being performed. T	This may take a few minutes	
Name	Tasks:			_
Time	Install	Server name	Status	_
Type	✓		<discovering></discovering>	
Credentials	✓		<discovering></discovering>	_
	_			
Apply				
Desulta				-
Results				-
Summary				-
,				
		_		
			< Previous Next > Einish Cancel	

You'll see that the Installer components on both cluster nodes is out of date, which is sort of true as they are not even there yet. Click "Next".

New Hyper-V Server							
Apply Please wait while required operations are being performed. This may take a few minutes Hyper-V							
Name	Tasks:						
Turne	Install	Server name	Status				
туре	 Image: A start of the start of		Installer component is out of date.				
Credentials			Installer component is out of date.				
Apply							
Results							
Summary							
		[< Previous Next > Finish Car	cel			





Watch the progress of the installation unfold.

	New Hyp	per-V Server	X
Results The following server	s have been processed.		
Name	Managed servers: Server	Status	
Credentials		Uploading package Veeam Tran Uploading package Veeam Tran	sport.msi
Apply		Installing package	Veeam Transport.msi Veeam Transport.msi
Results Summary			Waiting for other servers Waiting for other servers
		< <u>P</u> revious <u>N</u> ext >	<u>Fi</u> nish Cancel

When it's done and succeeded, click "Next".

	Nev	v Hyper-V Server	x
Results The following serve	ers have been processed.		
Name Type Credentials Apply Results Summary	Managed servers:	Status Server has been added successfully Server has been added successfully	
		<pre></pre>	



You'll get a summary and you click "Finish" to end this part.

	New Hyper-V Server	x
Hyper-V	Summary You can copy the configuration information below for future reference.	
Name Type Credentia Apply Results Summary	s	
	< <u>P</u> revious <u>N</u> ext > <u>E</u> inish Cancel	

If you go and look at the cluster nodes and select "Manage Volumes" ...

Home Home Add Edit Remove Server Server Manage Server	Server Tools Server Manage Rescan Upgrade Volumes Storage		
Backup Infrastruct	ture ies s oups er-V Justers J2R2RTM e Hosts dows	Name	Type Microsoft Hyper-V Server Upgrade Rescan Manage Volumes Properties



You will see the CSV volumes & local volumes of the cluster nodes. You will also see that the provider is the Compellent Replay Manager VSS provider.

	Manage Volumes X				
	Connected volumes:				
	Mount point	Туре	Provider	Max cor	<u>R</u> escan
	\\?2b6717ff-878c	Cluste	Compellent Replay Manager VSS	4	
١.	₽ C·\	Local	Microsoft Software Shadow Copy	4	<u>E</u> dit
	C:\ClusterStorage\CSV-DATA	CSV	Compellent Replay Manager VSS	4	
	C:\ClusterStorage\CSV-OS	CSV	Compellent Replay Manager VSS	4	
Ľ	I S:	Cluste	Compellent Replay Manager VSS	4	
	-				
	Disable changed block tracking for this host (not recommended)				
			Apply	ОК	Cancel

I have found that setting the Max concurrent snapshots on these CSV volumes to 1 instead of the default 4 reduces the potential for the hardware VSS provider to attempt and create snapshots of the same volume. The timing and communication between VEEAM and the hardware VSS provider can be a bit sensitive and this tweak helps with that. If you still run into issues consider using the "HyperVRestrictConcurrentSnapshotCreation" registry tweak (<u>http://forums.veeam.com/microsoft-hyper-v-f25/advice-on-backing-up-csv-with-hardware-vss-writer-t21016.html</u>) as an extra aid.

Configuration of the Off Host Backup Proxy

Check if you can see the CSV LUNs that are presented to this server in Disk Manager or in Diskpart

Icocal Users and Groups	· ·	
Performance A Device Manager	Disk 14	
Storage	1023.88 GB	1023.87 GB
Disk Management	On the U	
Routing and Remote Access	Disk 15	
 Gervices and WMI Control ▷ and Message Queuing 	Basic 249.88 GB Offline	249.87 GB
	@Disk 16	
	Basic 1228.67 GB Offline (1228.67 GB
	Gisk 17 Basic 499.88 GB Offline	499.87 GB
	6	



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es.	Administrator	: Command F	Prompt - dis	kpart 🕒	- 🗆 X
C:\>diskpart					^
Microsoft DiskPart vers	ion 6.3.9600	1			≡
Copyright (C) 1999-2013 On computer:	Microsoft C	orporation			
DISKPART> list disk					
Disk ### Status	Size	Free	Dyn Gpt		
	- 11				
	- 64				
Disk 14 Offline Disk 15 Offline	1024 GB 250 GB	0 B 0 B	*		
Disk 16 Offline Disk 17 Offline	1228 GB 500 GB	1024 KB 0 B	*		
DISKPART> _					
					~

If you can't, rescan your disks. If that doesn't help check the SAN configuration & mapping. If you can you're good to continue.

Go to your backup proxy and go to Properties.

Home Backup Proxy	ols oxy		
Add Edit Disable Remove Proxy + Proxy Proxy Proxy Manage Proxy	Upgrade		
Backup Infrastructure		D Type in an object n	ame to search for
Backup Proxies		Name	Туре
 Backup Proves Backup Repositories WAN Accelerators SureBackup Application Groups Virtual Labs Virtual Labs Managed servers Microsoft Hyper-V Hyper-V Clusters W2K12R2RTM Standalone Hosts Microsoft Windows 		Disable proxy Disable proxy Wpgrade Remove Properties	/ vper-V / fware



Under connected volumes you click on "Choose".

	Edit Hyper-V Offhost Proxy			
Choose a server for a managed servers tree	off-host Hyper-V backup proxy. You can only select between Microsoft Windows servers added to the e in the console. The server you select must have Hyper-V server role enabled.			
Server	Choose server:			
Traffic	✓ <u>A</u> dd New			
Deview	Proxy description:			
neview	Created by at 2/21/2014 5:42:09 PM.			
Apply				
Summary	Connected volumes:			
	Manual selection Choose			
	Max concurrent tasks:			
	< <u>Previous</u> <u>Next</u> > <u>Finish</u> Cancel			

You can leave it on auto selection or do manual selection. We choose manual (Populate doesn't always seem to work 100%) and select "Add".

	Connected Volu	mes 🛛 🗙
 <u>A</u>utomatic detect Backup proxy se Available volume <u>M</u>anual selection Backup proxy se The volumes list Volumes: 	tion erver will automatically detect vo es will be rescanned periodically n erver will only backup VM files lo must be managed manually as t	lumes it can backup VM files from. to detect newly added volumes. ocated on the volumes listed below. the storage infrastructure changes.
Host	Mount point	Add Remove
		Populate
		OK Cancel







We now navigate to our new Hyper-V cluster and see the CSVs we have available on this cluster for backup. Select them and click "OK".

Select Objects	x
Select objects:	\$
Type in an object name to search for OK Cance Cance	Q xel

Let the discovery take place.

Choose a se managed se	Edit Hyper-V Offhost Proxy rver for off-host Hyper-V backup proxy. You can only select between Microsoft Windows servers added to the rvers tree in the console. The server you select must have Hyper-V server role enabled.
Server	Choose server:
Traffic	Add New
Review	Created by at 2/21/2014 5:42:09 PM.
Apply	Please wait
Summary	Discovering installed components
	8 🗘 🛇
	< Previous Next > Finish Cancel





When done skip the throttling part, we have no need as our backup target is locally attached to the server.

	Edit Hyper-V Offhost Proxy			
Traffic Choose whether you Traffic compression	u want to compress the network traffic, a setting is used for replication only.	nd use inboud and	outbound traffic throttling fo	or this backup proxy.
Server	Throttling Limits outbound data rate when sending the data to the specified destinations.			
Inditic	The following throttling rules apply	to this proxy:	olo banamatri opit oqualiy.	
Review	Target IP address range	Throttling	Tìme	View
Apply				
Summary				
	Manage network traffic throttling ru	les		
	[< <u>P</u> revious	<u>N</u> ext > <u>Finish</u>	Cancel

Review your settings (defaults should be fine) and click "Next"

	Edit Hyper-V Offhost Proxy				
Review Please review the	settings and click Next to co	ntinue.			
Server Traffic Review Apply Summary	Backup proxy settings: Server name: Server type: Cores: Max tasks:	Physical 8 8			
	The following component	nts will be processed on the second			
	Transport	already exists			
	< <u>P</u> revious <u>N</u> ext > <u>F</u> inish Cancel				





Let the settings apply.

	Edit Hyper-V Offhost Proxy	x
Apply Please wait while required components are installed and configured. This may take a few minutes		
Server	Log:	
Terffic	Message	Duration
nano	Registering client for package Transport	
Review	V All required packages have been successfully installed	
	[] Discovering installed packages.	
Apply	[] Creating database records for proxy.	
6	Creating database records for installed packages.	
Summary	W Hyper-V backup proxy created successfully.	
	< Previous Next > Finish	Cancel

We're done and have successfully modified/update our Off Host backup Proxy. Click "Next" to get to the summary page.

	Edit Hyper-V Offhost Proxy	
Summary You can copy the configuration information below for future reference.		
Server Traffic Review Apply Summary	Summary: Hyper-V offhost backup proxy was successfully modified.	
	< <u>P</u> revious <u>N</u> ext > <u>P</u> inish Cancel	

Click "Finish" to end this part of the configuration.

Note that we will have to do this anytime we add a CSV to a cluster or remove one, for proper housekeeping.





The Results

Well let's create and run a backup job that uses this off host backup proxy. I leave configuring that job as an exercise for the reader, it should be a fairly familiar exercise. Let's see what the results are.

Here's a screenshot of our results. Nice speeds right? As we have both the DELL Compellent Replay Manager transportable snapshot presented to our VEEAM off host backup proxy for reading the data for backup and have the backup repository on the same server we don't need to copy any more data over the wire.



Do note that having both the DELL PowerVault DSM and the Compellent DSM on the same host might not be supported officially. As always the results you get will vary due to a number of reasons in your environment. The challenge is keeping the pipes filled and balanced. You need to find the optimal number of jobs (against separate clusters even) to find the balance between the source, VEEAM Backup & Replication VMs and the backup target (VEEAM Off Host Proxy & repository). This means that it can compete with the best out there and at a much more attractive price point due to the easy licensing not charging you per workload (SQL Server, Exchange, AD, File Servers) and the fact they don't charge huge amounts of money for deduplication, backup capacity and so on.





About the Author



Didier Van Hoye is an IT veteran with over 17 years of expertise in Microsoft technologies, storage, virtualization & networking. He works mainly as a subject matter expert advisor and infrastructure architect in Wintel environments leveraging DELL hardware to build the best possible high performance solutions with great value for money. As Microsoft MVP in Hyper-V, a member of the Microsoft Extended Experts Team in Belgium and a DELL TechCenter Rockstar he contributes his experience and knowledge to the global community. He's a blogger, writer & public speaker on his areas of expertise.



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