

Setting up the Dell $^{^{\rm TM}}$ DR Series System on Symantec $^{^{\rm TM}}$ NetBackup $^{^{\rm TM}}$

Dell Engineering July 2015

Revisions

Date	Description
February 2014	Initial release
July 2015	Added content about creating and configuring NDMP target container(s) for NetBackup. Consolidated content for the various container types and updated cleaner recommendation.

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Executive summary

This paper provides information about how to set up the Dell DR Series system as:

- A CIFS or NFS backup target for Symantec NetBackup
- An OST backup target for Symantec NetBackup
- A VTL backup target for Symantec NetBackup

This document is a quick reference guide and does not include all DR Series system deployment best practices.

For additional information, see the DR Series system documentation and other data management application best practices whitepapers for your specific DR Series system at:

http://www.dell.com/powervaultmanuals

NOTE: The DR Series system and Symantec NetBackup build versions and screenshots used for this paper may vary slightly, depending on the version of the system software you are using.

1 Installing and configuring the DR Series system for use with Symantec NetBackup

1.1 Symantec NetBackup prerequisites

The instructions in this document apply to Symantec NetBackup version 8.1 and later.

1.2 Installing and configuring the DR Series system

- 1. Rack and cable the DR Series system and power it on.
- 2. Initialize the DR Series system. In the *Dell DR Series System Administrator Guide*, refer to the following topics for more information about initializing the system: "iDRAC Connection," "Logging in and Initializing the DR Series System," and "Accessing iDRAC6/iDRAC7 Using RACADM".
- 3. Log on to iDRAC with the default IP address **192.168.0.120**, or the IP address that is assigned to the iDRAC interface. Use the username and password: "**root/calvin**".

	CONTROLLER	OTE 6 - ENTERPRISE		Support Al	bout Logoul
System Dell DR4000 root , Admin	Properties System Summ	Setup Power nary System I	Logs Alerts Console/Media Details System Inventory	vFlash Remote File Share	
System IDRAC Settings Batterfes Fans Intension	System Si	ummary lealth		•	C ?
Power Supplies	Status C	Component		Virtual Console Preview	
Removable Flash Media Temperatures Voltages		conotte		Options : Settings	
	2 F	Fans		- Ci	
Power Monitoring	🖬 II	Infrusion		and the state of t	
	P P	Power Supplies			
	B	Removable Flash Media			
	Т	Temperatures			
		roltages		Refresh	<i>n</i>
	Server Info	ormation		Quick Launch Tasks	
	Power Sta	ate	ON	Power ON / OFF	
	System M	lodel	Dell DR4000	Power Cycle System (cold boot)	
	System R	levision	1	Launch Virtual Console	
	Bystem H	lostName	DR4000-DKCV6S1.asglab.roundrock	View System Event Log	
	Operating) System	CentOS	View IDRAC Log	
	Operating	System Version	release 5.4 (Final) Kernel 2.6.18-164.e	Update Firmware	
	Service Ta	ag	DKCV6S1	Reset IDRAC	_
	Express S	Service Code	29529104401		
	EIOS Vers	sion	1.9.0		_
	Firmwate	Version	1.80 (Build 17)		

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4. Launch the virtual console.



5. After the virtual console is open, log on to the system with the username **administrator** and password **St0r@ge!** (the "0" in the password is the numeral zero).



6. Set the user-defined networking preferences.



7. View the summary of preferences and confirm that it is correct.

Set Static IP Ac	Idress k
IP Address	: 10.10.86.108
Network Mask	: 255.255.255.128
Default Gateway	: 10.10.86.126
DHS Suffi×	: idmdemo.local
Primary DNS Server	: 18.18.86.181
Secondary DMS Server	: 143.166.216.237
Host Name	: DR4000-5
Are the above settings correct	(yes/no) ? _

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8. Log on to the DR Series system administrator console using the IP address you just provided for the DR Series system, the username **administrator**, and the password **St0r@ge!** (the "0" in the password is the numeral zero).

.ogin		Reset Password
	Please enter your password:	1
	Username: administrator	
	Password: St0r@gel	
	Log II	

9. Join the DR Series system to Active Directory.

Note: If you do not want to add the DR Series system to Active Directory, see the *DR Series System Owner's Manual* for guest logon instructions.



a. Select Active Directory from left navigation area of the DR Series system GUI.

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b. Enter your Active Directory credentials.

E	CLL DR4100	w-01	Help. Log cul
	Ampesia di ecalina local (a Global View	Active Directory	niot
-	Dashboard Alerta	Settings	
	Events Health Usage	The Active Directory settings have not been configured. Click on the 'Jon' link to	configure Them.
	Statistics: Container	Active Directory Configuration	
•	Storage Containers Replication	Domain Name (FGDN)*	= fields are required.
	Compression Level Clients Schedulos	Password Enter	Active Directory Info
	Replication Schedule Cleaner Schedule	Car	ncel Join Domain
-	System Configuration Networking		
-	Adam Operatory Local Workgroup Obera Email Admin Contact Info Password Email Relay Hoot Date and Time Support Diagnostics Software Upgrade License		
Cop	pright @ 2011 - 2013 Dell Inc.	All rights reserved	

2 Configuring a CIFS or NFS target container

1. Create and mount a CIFS container by selecting **Containers** in left navigation area of the DR Series system GUI, and then clicking **Create** at the top of the page.

van	w-sw-02 testad ocarina lc 💌 Global View	Containers				Crea	ate dit Delete Dis	aplay Statistic
	Dashboard Alerts	Number of Containers: 1					Container Pa	ath: /containe
	Events	Containers	Files	NFS	CIFS	RDA	Replication	Select
	Health	backup	2	~	~		Not Configured	0
	-Usage Container Statistics	·						
	Container Statistics							
	Storage							
ł,	Containers							
l	Somainers							
	Replication							
	Replication Clients							
	Replication Clients Schedules							
	Replication Clients Schedules System Configuration							
	Replication Clients Schedules System Configuration Networking							
	Replication Clients Schedules System Configuration Networking Active Directory							
	Replication Clients Schedules System Configuration Networking Active Directory Local Workgroup Users							
	Replication Clients Schedules System Configuration Networking Active Directory Local Workgroup Users Email Alerts							
	Replication Clients Schedules System Configuration Networking Active Directory Local Workgroup Users Email Alerts Admin Contact Info							
	Replication Clients Schedules System Configuration Networking Active Directory Local Workgroup Users Email Alerts Admin Contact Info Password							
	Replication Clients Schedules System Configuration Networking Active Directory Local Workgroup Users Ernal Alerts Admin Contact Info Password Ernal Relay Host							
	Replication Clients Schedules System Configuration Networking Active Directory Local Workgroup Users Emsäl Alerts Admin Contact Info Password Emsäl Relay Host Date and Time							
	Replication Clients Schedules System Configuration Networking Active Directory Local Workgroup Users Email Alerts Admin Contact Info Password Email Relay Host Date and Time Support							
	Replication Clients Schedules System Configuration Networking Active Directory Local Workgroup Users Ernaid Alets Admin Contact Info Password Ernaid Relay Host Date and Time Support Diagnostics							

2. Enter a Container Name, select Enable CIFS or Enable NFS check box as needed.

NOTE: Symantec NetBackup supports both CIFS and NFS protocols.

3. Select the preferred client access credentials and then click Create a New Container.

ivar	1w-sw-02	Create New Container:		-
	Global	Assign a name to the container, select its type, access protocol 10 use a	nd add clients that need access	
	Dashbo	Container Name". sample	lame the container	ntainer
	Events	Connection Type [*] . O No Access NAS (NFS, CIFS) Rapit pata Ac		elect
	Health	NFS	CIFS	0
	Usage	NFS access path: 10.250.224.190./containers/sample	Cir S share path: 110.250.224.190(sample	
	-Contair Replica	Use NFS to backup UNIX in LINUX clients.	Use CIFS to backup MS Windows clients.	
	Storag	Select CIFS or NFS	Client Access:	
	Contai	Open Access (all clients have access)	Open Access (all clients have access)	
	Replica	Add client (IP or FQDN Hostname);	Add clients (IP or FQDN Hostname)	
	Clients	Add	Add	
	Sched	Clients: Enter Backup	Server Info	
	Networl	Enter Baekap	Server Inno	
	Active [
	Local V	-	+	
	Email A	NES Optione:		
	Admin	rw insecure		
	Email E	© ro		
	Date an	Map root to:		
	Suppor	-select		
í.	Diagno			
	Course and			

Note: For improved security, Dell recommends adding IP addresses for the following (Not all environments will have all components): Backup console (NetBackup Master Server, Media Server)

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4. Confirm that the container is added.

nw	r-sw-02.testad.ocarina.lc <mark>▼</mark> Global View Dashboard	Containers				Crea	te Edit Delete Dis	play Statist
	Alerts Events Health Usage	Message Successfully add Successfully add Successfully add	ed container "sample". ed NFS connection for conta ed CIFS connection for cont	ainer "sample ainer "sample	". •".			
	Container Statistics Replication Statistics	Number of Containers: 2					Container Pa	th: /contain
	Storage	Containers	Files	NFS	CIFS	RDA	Replication	Selec
ľ	Containers	backup	2	~	~		Not Configured	0
ļ	Clients	sample	0	1	~		Not Configured	0

5. Click **Edit.** Note down the container share/export path, which you will use later to target the DR Series system.

DELL DR4100 administrator (Log out) H								
Warnw-sw-02 Edit Container: sample tatist Global * = required fields * = required fields Dashbc Connection Type: © No Access ® NAS (NFS, CIFS) © IB pid Data Access (RDA) * = required fields	ics							
Aletts NFS CIFS Share path: 10.250.224.190/containers/sample CIFS Events VES VES Use CIFS to backup MS Windows clients. election Usage Image: CIFS Image: CIFS Image: CIFS	t							
Contain Client Access: Client Access: Client Access: Replica ⊘ Open Access (all clients have access) ∅ Open Access (all clients have access) Storag NFS Options: Contait ● rw Replica ○ ro								
Clients Schedu System Network Active E Local W Email A Admin C Passwo Email R Email R								
Date an Suppor Diagnos Software Upgrade License Cancel Modify this Container								

2.1 Setting up Symantec NetBackup storage units - Windows

6. Open the NetBackup Administration Console, and then expand **Storage**, which displays the **Storage Units** section.

Ele Edit Wew Actors Help	🛅 Storage - ivanw-w2k8-01 - NetBackup A	dministration Console					_ 🗆 🗙
Image: Strange Units: 0 Max: Concurrent Drives Robot Number Name Storage Unit Type Density Max: Concurrent Drives Robot Type Robot Number Name Storage Unit Type Density Max: Concurrent Drives Robot Type Robot Type </td <td>Eile Edit Yiew Actions Help</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>I</td>	Eile Edit Yiew Actions Help						I
Anil Storage Units: 0 Variew-W28-011 Variew-W28-011 Market Servers) Storage Unit Type Density Market Servers) Storage Unit Type Density Market Servers) Storage Unit Type Density Mark Concurrent Drives Robot Type Robot Storage Unit Type Density Mark Concurrent Drives Robot Type Robot Type Robot Storage Storage Unit Groups Catalogi Storage Unit Groups Catalogi Hota Properties Madia Servers	📘 • 💽 😂 💥 🕫 🗙 🖇 🖻	📽 🛔 🛛 🗶 🔮 🗞	! 😼 🖀 🔡 🖉	i 🔓			
Image: Marker volk301 (Master Servers) Name Storage Unit Type Density Max Concurrent Drives Robot Type Robot Number On Demand Image: Activity Monkor Image: Marker Servers Image: Ma	ivanw-w2k8-01	All Storage Units: 0					
Achthy Monitor NetBachty Management Beleachty Management	📑 ivanw-w2k8-01 (Master Server)	Name	Storage Unit Type	Density	Max Concurrent Drives Robot Type	Robot Number On Demand	
Image: Strape of s Image: Strape bits	Activity Monitor						
Image: Summary of all Policies Image: Policies	Anagement						
Contained and the servers	Reports						
	Summary of all Policies						
Image: Units	E Storage						
Storage Lift Groups S	- E Storage Units						
Gotrage Lifecycle Policies Getalog Getalog Hoster Servers Getalog Mode Servers Getalog G	- 🇞 Storage Unit Groups						
Catalog Catalo	Storage Lifecycle Policies						
Host Properties Host Arcoperties Host Arcoperties Host Servers Host Servers Host Servers Host and Device Management	Catalog						
Protect Set vers Set of the set of	Host Properties						
- ≝g Clents	Bit Media Servers						
Hodexing Servers Media and Device Management							
- By Media and Device Management	Indexing Servers						
	😑 🗒 Media and Device Management						
- 😨 Device Monitor	Device Monitor						
e 🖬 Meda	H Media						
	Disk Array Hosts						
	NDMP Hosts						
E Storage Servers	Storage Servers						
一局 Virtual Machine Servers	👘 Virtual Machine Servers						
단 200 Vault Management	🕀 🚳 Vault Management						
- en Access Management	Access Management Access Matal Dashara Management						
a-u& bata uarai kazinta wairafaina ir	H W bare Metal Resture Management						
	1	I					
Master Server: ivanw-w2k8-01 [Connected //						Master Server: ivanw-w2k8-01 Co	nnected //,

7. Right-click Storage Units and then click New Storage Unit.

Det.						
🛅 Storage - ivanw-w2k8-01 - NetBackup A	Administration Console					
Eile Edit View Actions Help						I
] 🗄 • 🔳 🖨 💥 🗝 🗙 🕮 🖻	84778	: 💁 😌 🚽 🔤	ê t ə			
ivanw-w2k8-01	All Storage Units: 0					1 Selected
ivanw-w2k8-01 (Master Server)	Name	Storage Unit Type	Density	Max Concurrent Drives Robot Type	Robot Number On Demand	
- Activity Monitor						
🖻 🛄 NetBackup Management						
Reports	1					
Policies	1					
Summary or all Policies						
Storage						
- Change						
Storage Lil 🗙 Delete						
	40400					
🖻 🔛 Host Propertie						
Master Se						
Eind						
Todeving S View	•					
Media and Device Management						
Device Monitor	1					
	1					
🗈 😼 Devices	1					
🖻 🕵 Credentials						
Disk Array Hosts	1					
NDMP Hosts	1					
Storage Servers	1					
Wirtual Machine Servers						
Access Management	1					
Bare Metal Restore Management						
	1					
	1					
	1					
1	J					
					Master Server: ivanw-w2k8-01	onnected //,

- 8. In the New Storage Unit window, enter the **Storage unit name** and select **BasicDisk** for the **Disk Type**.
- 9. Enter the **Absolute pathname to directory** (the UNC path to the DR Series system container share) and click **OK**.

New Storage Unit
Storage unit name:
sample-su01
Storage <u>u</u> nit type:
Disk 🔽 🔽 On demand only
Disk <u>t</u> ype:
BasicDisk
Storage unit properties
Media server:
ivanw-w2k8-01.testad.ocarina.local
Absolute pathname to directory:
\\10.250.224.190\sample Browse
$\hfill \Box$ This directory can exist on the root file system or system disk.
Maximum concurrent jobs: Reduce fragment size to: 1 524288 Megabytes
High water mark: 98 * % 80 * %
$\hfill\square$ Enable Temporary Staging Area. Copy data to its final destination according to its staging schedule
Staging Schedule
OK Cancel Help

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Note: The Windows service account for Symantec NetBackup requires appropriate permissions to the DR Series system CIFS Share for the step below to complete successfully. See **Appendix A** for information about setting up the Symantec NetBackup service account correctly. This should be done before the next step.

Storage unit <u>n</u> ame:			
sample-su01			
Storage <u>u</u> nit type:			
Disk		On demand only	e
Disk <u>t</u> ype:			
BasicDisk		-	
-Storage unit prope	rties		
Media server:			
ivanw-w2k8-01.te	stad.ocarina.local	•	
Absolute pathname	to directory:		
\\10.250.224.190	\sample	Browse View	Properties
This directory c	an exist on the root	file system or system di	isk.
Directory Proper	ties		
			^
Dropartias for dire	actory \\10.250.224		
Properties for dire	ectory \\10.250.224	l.190\sample	
Properties for dire	actory \\10.250.224	H. 190\sample Megabytes	
Properties for dire Capacity: Available	156671 153873	190\sample Megabytes Megabytes	
Properties for dire Capacity: Available % Full	156671 153873 2	+.190\sample Megabytes Megabytes	Jn
Properties for dire Capacity: Available % Full	156671 153873 2	H. 190\sample Megabytes Megabytes Close)n
Properties for dire Capacity: Available % Full	156671 153873 2	H.190\sample Megabytes Megabytes Close)n

10. Click View Properties to view the Directory Properties.

11. Close Directory Properties, and then click OK.





2.2 Setting up Symantec NetBackup storage units - Unix/Linux

For this procedure, ensure that you can mount/verify the NFS share from the UNIX/Linux client system. See **Appendix B** for information about how to mount/verify the NFS share.

The procedure for the Unix/Linux Environment is similar to the procedure for the Windows Environment as described in the preceding section. The difference is that you must use UNIX path of the DR Series system container export instead of the UNC path, as shown in the screenshot below.

Storage - localhost.	🖀 New Storage Unit	×	t.localdomain] _ 🗆 🗙
Symantec NetBackup™	Storage unit name:		
<u>File Edit View Actions H</u> elp	Storage unit type:		
	Disk	✓ On demand only	-
localhost.localdomain (Master Serve	Disk type:		
月 localhost.localdomain (Master Server	BasicDisk	•	Density On Demand Fragment M
Backup, Archive, and Restore	Properties and Server Selection]	
- NetBackup Management	Media server:		
🕶 📄 Reports	localhost 🔹		
Storage	Absolute pathname to directory:		
Storage Units	/mnt/nbu-backup	Vie <u>w</u> Properties	
• 🇞 Storage Unit Groups — 🗔 Storage Lifecycle Policies	This directory can exist on the root file system or system	disk.	
- 韇 Catalog	Maximum concurrent jobs: 🔲 Reduce fragment size to:		
- Media and Device Management	1 A S24287 A Megabytes		
Device Monitor	High water mark:		
🔶 🏧 Media	98 1 % 80 1 %		
Credentials	Crashla Tamparan Staring Area. Cany the data to its fina	destination	
- 🔄 Access Management	according to its staging schedule.	uescillacion	
- 🐯 Vault Management	Staging Schedule		
🗢 🍘 Bare Metai Restore Management	<u>Staging schedulen</u>		
		Cancel Helm	•
	<u>U</u> K	Cancel Help	I Alert Notification



2.3 Creating a new backup job with the DR Series system as the target

1. In the NetBackup Administration Console, right-click Policies, and then select New Policy.



2. Enter a new policy name, and then click OK.



3.	In the Attributes tab	select Policy type	and Policy storage.
----	-----------------------	--------------------	---------------------

Policy type: MS-Windows Destination Dgta classification: Quicy storage: Policy gtorage: Policy yolume pool: NetBackup Take checkpoints every: Limit jobs per policy: Limit jobs per policy: Wedia Owger:	✓ Go into gffect at: 11/25/2013 → 10:08:00 PM → Backup Network Drives Cross mount points Compression Encyption Collect disaster recovery information for: Bare Metal Restore Collect true image restore information with move detection Allow multiple gata streams Disable client-side deduplication Enable granular recovery Use accelerator Keyword phrase: Enable indexing for search (Must also be enabled for the schedule and client)
Inapshot Client Perform block level incremental backups Perform snapshot backups Retain snapshot for Instant Recovery or SLP management HyperAV server: Perform off-host backup Use: Machine:	Microsoft Exchange Attributes Exchange 2010 DAG or Exchange 2007 replication (LCR or CCR) Database backup source: Preferred server list (Exchange 2010 DAG only)

4. In the **Schedules** tab, click **New**, and then specify a schedule **Name**, and select **Type of backup**.

Attributes	🔁 Schedules 🖳 Clients 🦳 Backup Selections
Sun Mon Tue Wed Thu Fri Sat	2 4 6 8 10 12 14 16 18 20 22 24 Add New Schedule - Policy sample-policy Image: Start Window Exclude Dates Image: Start Window Exclude Dates Image: Start Window Image: Start Window
1	New Delete Properties New Delete Properties OK Cancel Help

5. Click **OK** and verify that one full backup type schedule was added into the policy.

Add New Policy	- sample	-policy											2
Attributes	🔁 Sche	dules 🛙 🗐	Clients 🦷	Backup 9	Selections								
					·								
	2	. 4	6	. 8	10	<u> </u>	12	14	16	18	20	22	24
Sun Mon	• +	+ +	+ +	+ +	+ +	• +	+ +	+	+ +	+ +	+ +	+ +	+ -
Tue	· +	+ + + +	+ + + +	+ +	+ +	· +	+ +	+	+ + + +	+ + + +	+ +	+ +	÷ 1
Wed -	· •	+ +	+ +	+ +	+ +	· +	+ +	+	+ +	+ +	+ +	+ +	+ -
Fri	· +	+ + + +	+ + + +	+ +	+ +	· +	+ +	+	+ + + +	+ + +	+ + + +	+ +	+ -
Sat [· · ·								· · ·			
Name	Tupe	Betent	Freque	Multipl	Storage	Volum	Fail all	Start	Sunthe	Check	Disk o	Media	Indexing
🎒 sample-s	Full Bac	2 weeks	1 Week	1			Continu	9	No	No		Any	No
茶													
									[<u>N</u> ew	Delete		Properties
										OK		ancel	Help

6. In the **Clients** tab, click **New**, enter the client name, and press **Enter**.

Add New Policy - sample-polic	¥				×
🔳 Attributes 🔀 Schedules	🖳 Clients 🔁 Backup Se	lections			
Client name	Hardware	Operating System	Besiliency	Indexina	
ivanw-w2k8-01	Windows-x64	Windows2008	Off	Yes	
*					
I✓ Detect operating system wh	en adding or changing a client.		<u>N</u> ev	w <u>D</u> elete	Properties
				OK Cancel	Help

ackup Seleci	tions				<u>s</u>
	🖪 Browse			×	1
	Address Ivanw-w2k8-01:			+ 🗈 📰 📰	
	⊕- 🕮 ivanw-w2k8-01	Filename A: C: D:	Size Type Date Folder Folder Folder	User Gr Per rwxrv rwxrv rwxrv rwxrv	
			ОК	Cancel Help	
			New Dela	ete Rename Up	Dow

7. In the **Backup Selections** tab, click **New** and then click **Remote Folder**.

8. Select a backup path, and then click **OK**.

Attributes	🔁 Schedules 🖳 Clients 🖳 Backup Selections
	Address ivanw-w2k8-01:/C/nbudataset
	OK Cancel Help
	New Delete Hename Up Down OK Cancel Help

9. Click **OK.** A new policy is added.

🛅 Policies - ivanw-w2k8-01 - NetBackup Ad	ministra	tion Cor	isole																			
Eile Edit View Actions Help																						I
🗊 • 💽 🚭 💥 🐢 🗙 🕉 📭	🛍 🛔	V X	1 😰	1	🛐 🐮	<u>"</u> ~) 🚊 🚳	i 🍄 🗄	ÿ 🛒	💾 🎶	⋟ 💈	3										
ivanw-w2k8-01	sample-p	policy: Atl	tributes																			E
📑 ivanw-w2k8-01 (Master Server)	Name	Dat	Type			Stor.	Volu	. Che		Effe		Coll.			D	Sna	Sna	Med	I Ena.	VM	. Exc	. Pref
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NetBackup Management	4																				1	
Reports Policies	Ë.																					
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sample-policy			2		4		6	8		10		12		14	1	.6	. 1	3	20		22	- 24
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Media Servers	Name		Туре				R	etention	F	requency	M.,	Storage		Volume	e Pool	F	Star	S	C D	Inde	Media C	wner
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Media and Device Management																						
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Devices	sample-p	policy: 1 (lients																			티미
Disk Array Hosts	Client na	ame	Har	dware			Operating	System					Resi	liency						Indexi	ig 🛛	
- NDMP Hosts	📑 ivans	w-w2k8-0	1 Win	dows-x6	4	1	Windows2	008					Off							Yes		
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10. To run a manual backup right away and monitor the status, right-click the new policy, and select **Manual Backup**.

🛅 Policies - ivanw-w2k8-01 - NetBackup Admi	inistration Conso	le														_ 🗆 ×
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ivanw-w2k8-01	sample-policy: Attrib	utes														B
ivanw-w2k8-01 (Master Server)	Vame Dat	Туре	Stor	Volu	. Che	E	fe	Co	I		D., Sna	Sna	Med	. Ena	VM E	xc Pref
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E 📃 NetBackup Management	d														1	
Reports																•
Summary of all Policies	sample-policy: 1 Sch	edules														80
sampler Bo com		2 4		6	8		10	12	100	14	16	18	3	20	22	24
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Storage Change En	iter +	• • •	+	* *	+	•	• •	• •	+	• •	•	+ +	+	+	• •	+ -
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Host Proper			-		-	-			-		-		÷.	-		
Master : Alexy Schedule				<u></u>									· · · ·			
Media Si New Clent		Гуре		R	etention	Frequ	iency M	Storage		Volume Po	ol	F Star.	S C	D In	de Me	dia Owner
Clients I New Packup Selection	ple-sche I	Full Backup		2	weeks	1	Week	1				Co	No N	lo No	No	
Media and Devis Conv to New Policy																
Device Moni																
🕀 🚾 Media 🥠 Activate																
E gy Devices 🐉 Deactivate	policy: 1 Clier	nts														80
E- 🚼 Credentials 📓 Manual Backup	ame	Hardware		Operating	System				Resi	iency				I	ndexing	
	w-w2k8-01	Windows-x64		Windows2	800				Off					Y	es	
Storage View																
Witual Machine Servers																
🖭 🛞 Vault Management																
E Constant Access Management																
Eare Metal Restore Management	sample-policy: 1 Sele	ctions														
	Backup Selections															5
-	C:\nbudataset															
												0	Master Se	rver: ivanw	-w2k8-01	Connected //

11. Select the new schedule, and then click **OK**.

눰 Policies - ivanw-w2k8-01 - NetBackup A	dministration Console
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ivanw-w2k8-01	sample-policy: Attributes
Vianu+-w2k8-0L (Master Server) Activity Monitor Mactivity Management File Reports Policies	Name Dat Type Stor Volu Che I Effe I Coll I D Sna Med Ena VM Exc Pref Image: Sam MS-Windows sampl Net8 () Any No Any No Any No .
Summary of all Policies Sumary of all Policies Storage Units Storage Units Catalog Media and Polycies Media and Device Management Media and Device Management Device Montor Catalog Media and Device Management Device Montor Catalog Media and Device Management Device Montor	2 4 6 8 10 12 14 16 18 20 22 24 Sun - - Manual Backup X
Credentials Disk Array Hosts Disk Array Hosts Sorage Servers Wrual Machine Servers Wald Management Wald Management	Cellent name Hardware Cencel Help Resiliency Indexing OK Cancel Help Resiliency Off Yes
Bars Metal Restore Management Bars Bars Metal Restore Management Bars Bars Metal Restore Management Bars Bars	sample-policy: 1 Selections

12. Click Activity Monitor to monitor the job status.

🛅 Activity Monitor - ivanw-w2k8-01 - NetBi	ickup Administration Console	_ 🗆 ×
Eile Edit View Actions Help		I
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ivanw-w2k8-01	Ivanw-w2k8-01 : Topology	? 🗆
Leonunuclikalt (Matter Server) La Activity Monitor Veter School of Activity Monitor Veter School of Activity Monitor Veter School of Activity Monitor Summary of all Policies Summary of all Policies Sumary	ivenw-w288-01.testad.ocerina.local	
🖻 醫 Media and Device Management	ivanw-w2k8-01: 9 Jobs (0 Queued 1 Active 0 Waiting for Retry 0 Suspended 0 Incomplete 8 Done)	
Device Monitor	Joh TD Type Joh State State Status Joh Policy Joh Sc Client Media Start Time St	torage Light End Time Atter
E Devices	🞲 80 Backup Active sample sample ivanw-w 11/25/2013 1 sa	ample-su01
Credentials Disk Array Hosts Disk Array Hosts Disk Array Hosts Storage Servers Witual Machine Servers Witual Machine Servers Witual Machine Servers Witual Machine Servers Difference Management Diff	۶ <u>ــــــــــــــــــــــــــــــــــــ</u>	
	Jobs Services Processes Drives	
	Master S	Server: ivanw-w2k8-01 Connected //

13. Double-click the job to view job details.



2.4 Setting up native replication & restore from the target container

2.4.1 Building the replication relationship between two DR Series systems

1. Create a source container on the first DR Series system.

ivar	-sw-03.ocarina.local - Global View	Containers				Crea	ite Edit Delete Dis	play Statistic:
1	- Dashboard - Alerts	Number of Containers: 10					Container Pa	th: /container
	Events	Containers	Files	NFS	CIFS	RDA	Replication	Select
	Health	backup	2	-	~		Not Configured	0
	- Usage - Container Statistics	cifs1	6		~		Not Configured	0
	Replication Statistics	cifs11	0		~		Not Configured	0
	Storage	kknfs	0	~			Not Configured	0
	-Containers	nbu-cifs-01	14		~		Not Configured	0
	Clients	nvbu	7	~	~		Stopped	0
	Schedules	nvbu1	7		~		Online	0
	Replication Schedule	nw-cifs-01	21		~		Not Configured	0
	Cleaner Schedule	rep-source	0		1		Not Configured	0
	-Networking	sample	12		~		Not Configured	0
-	Active Directory Local Workgroup Users Ernail Alerts - Admin Contact Info - Password - Ernail Relay Host - Date and Time - Support							

- 2. Create a target container on the second DR Series system.

vanw-sw-01.testad.ocarina. Global View	Containers				Crea	ite Edit Delete Dis	play Statistics
Alerts	Number of Containers: 10					Container Pa	th: /containers
Events	Containers	Files	NFS	CIFS	RDA	Replication	Select
Health	backup	0	~	~		Not Configured	0
Usage Container Statistics	cifs1	11		~		Not Configured	0
Replication Statistics	cifs2	0		~		Not Configured	0
Storage	kknfs	0	~			Not Configured	0
Containers	kknfs2	0	~			Not Configured	0
Replication	nfs-01	0				Not Configured	0
Schedules	ofe1	0	-			Not Configured	0
Replication Schedule	nu sife 04	0	v			Not Configured	0
Cleaner Schedule	nw-ciis-on	9		~		Not Conligured	0
System Configuration	rep-target	U		~		Not Configured	0
Networking	sample	7		~		Not Configured	0
Local Workgroup User Local Workgroup User Email Akets Admin Contact Info Password Email Relay Host Date and Time Support	S						

3. On the first DR Series system, go to the **Replication** page, and then click **Create**.

n-sw-03.ocarina.local	Replication		Create Edit	Delete Stop Start	Bandwidth Disp	lay Statis
Dashboard	Number of Source Replication	ns: 2				
Events	Local Container Name	Role	Remote Container Name	Peer State	Bandwidth	Selec
Health Usage	nvbu	source	10.250.243.18 nvbu	Stopped	Default	0
-Container Statistics Replication Statistics	nvbu1	source	10.250.243.18 nvbu1	Online	Default	0
Replication						

4. Select a local container as the source container, and then enter the information for the second DR Series system.

Step 1: Select a local container * backup cifs1 cifs1 cifs1 cifs-01 rep-source sample Step 2: Select Encryption * • None 128 bit 256 bit	Step 3: Select a role * Source Target Source	Step 4: Remote container set Create container on remote Map to container on remote Username*; Password*; Peer System*; Remote Container;	ttings e system administrator 10.250.242.133 Retrieve Containers(s)	* = required field
Password Ernail Relay Host Date and Time Support			Cancel	Create Replicatio

5. Click **Retrieve Containers**, and then select the target container on the list.

25 Setting up the Dell[™] DR Series System on Symantec[™] NetBackup[™] | July 2015

Create Replication		administrator (Log out) Help
Step 1: Select a local container* Step Dackup Gifs1 cifs11 kknfs nbu-cifs-01 nw-cifs-01 rep-source sample Step 2: Select Encryption* • • None • 128 bit • 256 bit •	Source Source Step 4: Remote container set Source Map to container on remot Wap to container on remot Username*: Password*: Peer System*: Remote Container	* = required fields ttings te system administrator 10 250 242 133 Retrieve Containers(s) backup cifs1 cifs2 kknfs2 nfs-01 nfs-01 nfs-01 rep-target sample v
Passworu Email Relay Host Date and Time Support Copyright © 2011 - 2013 Dell Inc. All rights reserved.		Cancel Create Replication

6. Click Create Replication

Step 1: Select a local container	Step 3: Select a role *	 Step 4: Remote container se Create container on remo 	* = required fi te system
Step 2: Select Encryption *	Source	Map to container on remo Username*: Password*: Peer System*: Remote Container:	administrator administrator 10 250 242 133 Retrieve Containers(s) backup cifs1 cifs2 kknfs2 kknfs2 nfs-01 nfs1 nw-cifs-01 rep-target sample v
Password Ernail Relay Host Date and Time Support			Cancel Create Replica

7. Verify that the replication relationship between the DR Series systems is created.

n-sw-03.ocarina.local	eplication		Create Edit	Delete Stop Start	Bandwidth Disp	lay Statis
Dashboard Alerts	mber of Source Replication	is: 3				
-Events	ocal Container Name	Role	Remote Container Name	Peer State	Bandwidth	Select
Health Usage r	ivbu	source	10.250.243.18 nvbu	Stopped	Default	0
Container Statistics Replication Statistics	nvbu1	source	10.250.243.18 nvbu1	Online	Default	0
Storage Containers	ep-source	source	10.250.242.133 rep-target	Online	Default	۰
Replication						
Clients						
Schedules						
Replication Schedule						
Replication Schedule Cleaner Schedule						
Replication Schedule Cleaner Schedule System Configuration						
Replication Schedule Cleaner Schedule System Configuration -Networking						
Replication Schedule Cleaner Schedule System Configuration Networking Active Directory						
Replication Schedule -Cleaner Schedule System Configuration Networking -Active Directory -Local Workgroup Users						
Replication Schedule Cleaner Schedule System Configuration Networking Active Directory Local Workgroup Users Ernail Alerts						
Replication Schedule -Cleaner Schedule System Configuration -Networking -Active Directory -Local Workgroup Users -Email Alerts -Admin Contact Info December 1						
Replication Schedule Cleaner Schedule System Configuration Networking Active Directory Local Workgroup Users Email Alerts Admin Contact Info Password Email Bolaw Hert						
Active Control of						

2.4.2 Backing up the image to the source DR Series system

This procedure is optional – if the source DR Series system container is newly created without having data backed up.

1. Add the source container to NetBackup.

🗧 Storage - ivanw-w2k8-01 - NetBackup A	Idministration Console			-	- 🗆 ×
Elle Edit Yiew Actions Help					
🛛 🗉 🔹 🖉 🖉 🕺 👘	🛍 🛔 🛛 🎢 🛃	😵 Change Storage Unit 🛛 🗙			
ivanw-w2k8-01	All Storage Units: 1	Storage unit name:		1	Selected
ivanw-w2k8-01 (Master Server)	Name	rep-source	Robot Type	Robot Number On Demand	
Activity Monitor	rep-source	Storage unit type:		Yes	
NetBackup Management		Disk V On demand only			
E Policies					
Summary of all Policies		Disk type:			
E- I Storage		BasicDisk			
- Storage Units		Storage unit properties			
E Storage Unit Groups		Media server:			
Catalog		ivanw-w2k8-01			
H S Host Properties		Absolute pathname to directory:			
🖃 🔜 Media and Device Management		\\10.250.224.190\rep-source Browse View Properties			
🕀 📼 Media		This directory can exist on the root file system or system disk.			
E Devices		Maximum concurrent jobs: Reduce fragment size to:			
H W Vault Management		1 524288 Megabytes			
+ Access Management					
🗄 🏀 Bare Metal Restore Management		High water mark:			
2-02-11-12					
		- Enable Temporary Staging Area, Copy data to its final destination			
		according to its staging schedule			
		Charles Cabadda			
		Draging prirebule			
		OK Cancer Heip			
1]				
				Master Server: ivanw-w2k8-01 Conne	cted //

2. Create a new backup policy.

🛅 Policies - ivanw-w2k8-01 - NetBackup Ad	ministra	tion Cor	nsole																			
Eile Edit View Actions Help																						
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ivanw-w2k8-01	dr-replci	ation-poli	icy: Attrib	utes																		E
📑 ivanw-w2k8-01 (Master Server)	Name	Dat	. Type	Stor	. Volu	. Che.		Effe		Col	I 🗌		D	Sna	Sna	Med.	Ena.	VM	. Exc	Pre	f	R., U.,
Activity Monitor	🔳 dr-r.		MS	rep-s.	NetB.		. (. 12/1/		No						. Any	No					No
MetBackup Management																						
	- · ·																					
Summary of all Policies	dr-replci	ation-poli	icy: 1 Sch	edules																		
dr-replciation-policy			<u>2</u>		4	. <u> </u>	5	8		10		12		14	1(5	18		20		22	24
E E Storage	Mon	+	+	+	+ -	• •		+	+	+	+	+	+	•	• •	• •	+	+	+	+	+	+
Storage Units	Tue	•	+	•	•	• •	• •	+	+	+	•	+	•	•	• •	• •	+	•	•	•	•	+
Storage Lifecycle Policies	Wed [+	+	-	÷ .		• •	-	-		-	-	-		• •		-	+	-	-	-	: 1
atalog	Thu	-	+	-	÷ .			-	-	+	-	+	-				-		-	-	-	
🗈 🕋 Host Properties	Fri	+	+	+	+ -	• •		+	+	+	+	+	+			•	+	+	+	+	+	+ -
E 🎦 Media and Device Management							· · · ·							1	. <u> </u>					<u>.</u>		····· ,]
Device Monitor	Name		Type	al			R	etention	F	requency	M	Storage		Volume	Pool	F	Star	S (D	Inde	Media	Owner
	UI VII		Full Ba	скир			2	weeks		1 wee	κı					Co		NO P	NO INO		NO	
🗄 🛃 Credentials																						
🕀 🛞 Vault Management																						
Access Management																						
	dr-replci	ation-poli	icy: 1 Clier	nts																		
	Client na	ame	Hard	dware		0	Operating	System					Res	iliency						Indexin	g	
	🛃 ivan»	w-w2k8-0	01 Wine	dows-x64		V	Vindows2	800					Off							Yes		
	dr-replci	ation-poli	icv: 1 Sele	ctions																		
	Backup	Selections																				
	C:\D	ownLoad	e																			
	_ ·																					
	I																	dactor Se	ruari i	000-0021-0	-01 C-	onected
																		haster be	wer: iva	* WV*WZKC	-or jee	millioueu //,

3. Run the backup job.

🖕 Activity Monitor - ivanw-w2k8-01 - NetB	ackup Administration Console			_ [] ×
Eile Edit View Actions Help				I
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ivanw-w2k8-01	ivanw-w2k8-01 : Topology			? 🗆
Image: Second	Varw-w28-01: 1 Jobs (0 Queu Job ID Type Y 93 Backup	Job Details:93 Job ID: 33 Job Dverview Detailed Status J Job pe: Backup Sub type: Immediate Client: ivanww2k8-01 Matter serve: ivanww2k8-01 Job policy: dr.repication.policy Policy type: MS-Windows Job chedule type Policy type: NG Swindows Job chedule trut Schedule type: Full Backup Priority: 0 Dume: root Group: other Compression: No Data movement: Standard Olf-host: Statu:: the requested operation w Percent Complete: 100%	Job State: Done (Successful)	1 Selected Storag End Time Attempt Operat Kiloby) rep-source 12/1/20 1 440
	Jobs Service	s Processes Drives		
				Master Server: Ivanw-w2k8-01 Connected

2.4.3 Cleaning up the image from NetBackup

This procedure is optional and is only required when importing of images reports a failure (The image import procedure is described in later in this document). The purpose of this procedure is to clean up residual images that could have conflicts with imported images.

1. Stop replication between the DR Series systems.

in	-sw-03.ocarina.local	Replication		Create Edit	Delete Stop Start	Bandwidth Disp	ay Statisti
	Dashboard	1					
	- Alerts	Message	anned seallest	in the second			
	Health	Successfully st	opped replicati	on rep-source.			
	Usage						
	Container Statistics	Number of Source Replication	ns: 3				
	Replication Statistics	Local Container Name	Pole	Remote Container Name	Peer State	Bandwidth	Select
	Storage	Local container Name	Note	10.050.040.40	reerstate	bandwidth	Select
1	Replication	nvbu	source	nvbu	Stopped	Default	0
ľ	Clients	nvhu1	source	10.250.243.18	Online	Default	0
	Schedules	Inour	boarco	nvbu1	Offinite	Derdan	
	Replication Schedule	rep-source	source	10.250.242.133	Stopped	Default	0
	Cleaner Schedule			rep-target			
	System Configuration						
	Networking						
	Active Directory						
	-Email Alerts						
	Admin Contact Info						
	Password						
	Email Relay Host						
	Date and Time						
	Support						

Note: Before cleaning up the image from NetBackup, you should stop/delete replication first. If you do not, the backup image on the target DR Series system will be cleaned up.

2. Clean up the image, and from the command line, run the following command. NetBackup will automatically run the cleanup job.



2.4.4 Importing the image from the target DR Series system

1.	Go to Catalog, and then click Initiate Import.	Enter the target container path,	and then click OK
	🛱 Catalog - ivanu-w2b8-01 - NetBackun Administration Concole		

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ivanw-w2k8-01	Action:		Copies:		
ivanw-w2k8-01 (Master Server)	Verify	•	Primary Copy	у	•
Activity Monitor	- Madia		Policy:		
😑 🛄 NetBackup Management	Media ID: Media	Server:	<all policies:<="" td=""><td>>.</td><td>•</td></all>	>.	•
		Initialize Import	×]	
Policies	C Disk types:			es>	-
dy replication policy	Basic Disk	Use Import Images Wizard			_
The Storage	Madia Canana	Media Server:		/pes>	Ψ
Catalog	Media perver:	ivanw-w2k8-01	•	ne):	_
Host Properties	All Media bervers>	Location of images			•
😑 🗒 Media and Device Management	Date / time range:	Image type:			_
Device Monitor	Between: 11/30/2013	Disk		le default job priority	
E Be Devises	And: 12/ 1/2013				
		Disk Type:		75000	
E Wault Management		Basic Disk		nber is greater priority)	
🗄 🚰 Access Management		Path:			
🗄 🏀 Bare Metal Restore Management		110.250.242.133irep-target			Help Search Now
	Images: 11/30/2013 6:19:41 Pf	Wronepoint in yearling and Drowsering			
	Backup ID Date			Num Primary C Mirror Mount Host	On Hold Indexing
	Enter your search criteria to be				
			c 1 1		
			Cancel		
1					
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	💾 Search 🛄 Results	<u>ا</u>			
				Master Server: in	vanw-w2k8-01 Connected //

2. Click the **Results** tab, and check the import results.

🛅 Catalog - ivanw-w2k8-01 - NetBackup A	dministration Console			
Eile Edit View Actions Help				X
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ivanw-w2k8-01	Results:			
Harawwakie-01 (Mater Server) Activity Monitor Activity Moni	Operation 🛃 jtsplmport1-20131201184311.log	Time Requested 12/1/2013 6:43:11 PM	Las Updated 12/1/2013 6:43:14 PM	
Toperties Media and Device Management Sevice Monitor Sevice Monitor Media	Log File: C:\Program Files\Veritas\NetBackup\Logs Import phase 1 started 12/1/2013 6:43:11 PM 18:43:11 INF - Create DB information for path \\10 18:43:11 INF - Initiation of bpdm process to phase	luser_ops11VANW-W2K8-01/Administrator\logs1jbp1mport1-2013 .250.242.133\rep-target. 1 import path \\10.250.242.133\rep-target was successful.	1201184311.log	
B	18:43:13 INF - Recreating image information for clie 18:43:13 INF - Recreating copy 1, fragment 1 infor 18:43:14 INF - Creation of database information for	ent ivanw-w2k8-01, policy dr:replication-policy, and schedule full, d mation for image. import of path \\10.250.242.133\rep-target complete.	one on 12/01/2013 18:27:41.	
	3			×
	🕅 Search 📃 Results			
1			() Master Server: ivan-w	2k8-01 Coppected 4

3. Go back to the **Search** tab, select **Import**, and then click **Search Now**.

🛅 Catalog - ivanw-w2k8-01 - NetBackup	Administration Console		_ 🗆 ×
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4. Select the import image, and then click Import.

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5. Go to the Activity Monitor or run the bpimagelist command, and check the image import status.





2.5 Restoring the image from the target DR Series system

1. Click the NetBackup Administrator Console.

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2. Select the files that you want to restore, and then click Start Restore of Marked Files.

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3. Run the restore job.





3 Creating and configuring OST target container(s) for NetBackup

1. Create an **OST** container in the DR Series system GUI by selecting **Containers** in the left navigation area and then clicking **Create** at the top of the page.

	DR4100 edwinz-sw	-01					He	elp Log out
ed	winz-sw-01.ocarina.local 👻	Containers			•	Creat	e Ed Delete Dis	play Statistics
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	Email Relay Host							
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	-Software Upgrade							
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Cop	yright © 2011 - 2013 Dell Inc. A	Il rights reserved.						

2. Enter a container name and select the connection type as RDA. Then select the RDA type as Symantec OpenStorage (OST).



3. Click Create a New Container and confirm that the container was added.

vys-63.ocarina.local 🔹	Containers				Creat	e Edit Delete Dis	
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Schedules System Configuration Networking Active Directory Local Workgroup Users Email Alerts Admin Contact Info Password Email Relay Host Date and Time Support							

3.1.1 Setting up NetBackup for virtual synthetic backup on a Windows or Linux client

Note: Make sure that the Dell OST plugin is installed on the DMA client that is used for NetBackup.

1. Launch the NetBackup Console.


2. Right-click Media and Device Management and select Credentials > Storage Server, and then click New.

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ost-w2k8r2-04	All Storage Servers (0)		
ost-w2k8r2-04 (Master Server)	Name	Server Type	Media Servers Configured for snapshots
🖃 🛄 NetBackup Management			
Reports			
E- Care Policies			
Storage Units			
- Storage Unit Groups			
Storage Lifecycle Policies			
- 🖑 Catalog			
🕀 🚟 Host Properties			
E 📸 Media and Device Management			
Device Monitor			
H Media			
Devices			
-Ba Media Servers	Media Servers (No Credentialed Device Selected)		
Server Group	Name		
- Topology			
- 🚱 SAN Clients			
🖻 🎨 Credentials			
Disk Array Hosts			
P NDMP Hosts			
Talland St New Ins			
Vault Managem			
P Refresh			
E Ga Bare Metal Res & Find			
View			
Tion			
			Master Server: ost-w2k8r2-04 Connected //,

3. In the **Storage server configuration wizard** dialog box, select **OpenStorage** from the list and click **Next**.

Storage server configuration wizard	×
Add Storage Server Provide details to create storage server	C
Select the type of disk storage to configure:	
Note:	
OpenStorage is a Symantec technology that lets you use a vendor-provided intelligent disk appliance as disk storage.	
< Back Next > Cancel	Help

- 4. Under **Storage server name**, enter the DR Series system IP address or hostname, and under **Storage server type**, enter **DELL**.
- 5. In the **Media server** list, select the media server and enter the user name: **backup_user**, password: **St0r@ge!**

Provide details to crea	ate storage server	C C
itorade server details		
itorage server name:	swsys-63	-
Use Sumantec's OpenStor	rage plug-in for petwork-controlled storage server	
		-
nuraye server (ype:	JUELL	
elect a media server that has he storage server for its capal	s the vendor's OpenStorage plug-in installed. NetBackup w bilities by sending the probe through the media server you s	ill query pecify.
-		
		-
1edia server:	ost-w2k8r2-04	
fedia server:	ost-w2k8r2-04	
fledia server: Inter credentials:	ost-w2k8i2-04]
Aedia server: Inter credentials:	ost-w2k8r2-04]
Aedia server: Inter credentials:	ost-w2k8r2-04]
Aedia server: Enter credentials: Jser name: ³ assword: Confirm password:	ost-w2k8t2-04]
Media server: Enter credentials: Jser name: Password: Confirm password:	ost-w2k8t2-04	
Vedia server: Enter credentials: Jser name: Password: Confirm password:	ost-w2k8r2-04	
vledia server: Enter credentials: Jser name: Password: Confirm password:	ost-w2k8r2-04	

6. Make sure the storage server creation is successful and that authentication is working.

age Serv	er Configuration Wizard		
torage Perfo	e Server Creation Status orming required task for storage serve	r creation	Ŵ
lease wai	t while the wizard completes the following tasks	s:	
Status	Performing task	Details	
¥	Creating storage server swsys-63		
¥	Adding credentials for server ost-w2k8r2-04.	-	
•			F
	Z Rack	Next	Help

The created storage server should now be listed.



7. Right-click Media and Device Management and select Devices -> Disk Pool, and then click New.

🛅 Devices - ost-w2k8r2-04 - NetBackup Administra	ation Consol	e						
<u>Eile Edit View Actions Help</u>								
🖪 • 📧 🍜 💥 🛯 X % 🖻 🛍 🛔	🛛 🗶	Ø 😒	🔂 🚆	8				
ost-w2k8r2-04	All Disk Pools							
ost-w2k8r2-04 (Master Server)	Name	Storage Ser	ver Name	Numbe	Numbe	Used C	Availab	Raw Size Us
🖻 🗒 NetBackup Management								
🕀 📄 Reports								
🖻 🗔 Policies								
Summary of all Policies acce								
🖻 📼 Storage								
- 🔤 Storage Units								
Storage Unit Groups								
Storage Lifecycle Policies								
Catalog								
Host Properties								
Media and Device Management								
Drives								
- B Robots								
Media Servers								
Server Group								
Topology								
Disk Deele								
SAN 🧏 New								
Credent Disk Pools								
Disk Disk Disk Pools								
NDN 🕼 Refresh								
Stor								
T W Vault Manac View								
H Martin Ma Martin Martin Mart								
H Sare Metal Restore Management								
	1.1							

8. In the **Disk Pool Configuration Wizard** dialog box, select **OpenStorage (DELL)** for **Type**. Disk Pool Configuration Wizard

Disk Pool Select the type of disk pool to create.	
Туре:	
OpenStorage (DELL)	
Note: If a desired disk pool type is not shown in the list above, verify that the appropriat	e
license key is installeu anu mat a stolage server or mat type has been delineu.	
T C C C C C C C C C C	
Lo continue, click Next.	
	1
<back next=""> Cancel</back>	Help

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9. In the **Storage server** list, select the DR storage server created previously.

NEIELL ALVUS	je Server	-
Select sto	age server to scan for disk volumes.	-
		~
otorage server:	1-	
Name Service 52		
SMSA2-P3	DELL	
Note: If a storag	server does not appear in the list, then NetBackup has not been made	
Note: If a storag aware of its exis	server does not appear in the list, then NetBackup has not been made ence.	
Note: If a stora <u>c</u> aware of its exis	server does not appear in the list, then NetBackup has not been made ence.	
Note: If a stora <u>c</u> aware of its exis To continue, cli	server does not appear in the list, then NetBackup has not been made ence. k next.	
Note: If a stora <u>c</u> aware of its exis To continue, cli	server does not appear in the list, then NetBackup has not been made ence. k next.	
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Note: If a stora <u>c</u> aware of its exis To continue, cli	e server does not appear in the list, then NetBackup has not been made ence. k next.	
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Note: If a storag aware of its exis To continue, cli	e server does not appear in the list, then NetBackup has not been made ence. k next.	

10. Select the **OST** container created previously, which will be used for backup.

Select Disk Pool Properties and Volumes Select the disk pool properties and volumes to use in the disk pool. Storage server: swsys-63 Storage server type: DELL Disk pool configured for: Backup Disk pool properties and volumes Image: Configured for: A disk pool inherits the properties of its volumes. Only volumes with similar properties can be added to a disk pool. If properties are specified, the list displays volumes that match the selected properties. If properties are specified, the list displays volumes that match the selected properties. Replication source: Replication target Select volumes on the storage server to add to the disk pool. Volume Name Available Space Raw Size Replication If of available space: 2.2934 TB 2.2938 TB None Total available space: 2.2938 TB None (Back Next) Cancel H	sk Pool Configuration Wi	zard			
Storage server: swsys-63 Storage server type: DELL Disk pool configured for: Backup Disk pool properties and volumes: A disk pool inherits the properties of its volumes. Only volumes with similar properties can be added to a disk pool. If properties are specified, the list displays volumes that match the selected properties. Replication source Replication target: Select volumes on the storage server to add to the disk pool. Mourne Name Available Space QST 2.2934 TB Total available space: 2.2934 TB Total raw size: 2.2938 TB Kalex Next	Select Disk Pool Pro Select the disk po	operties and Volume ol properties and volu	es umes to use in th	e disk pool.	
Storage server type: DELL Disk pool configured for: Backup Disk pool properties and volumes Image: Configured for the properties of its volumes. Only volumes with similar properties can be added to a disk pool. If properties are specified, the list displays volumes that match the selected properties. If properties are specified, the list displays volumes that match the selected properties. Replication source: Replication target. Select volumes on the storage server to add to the disk pool. Volume Name Available Space QST 2.2934 TB 2.2938 TB None	Storage server:	swsys-63			
Disk pool configured for: Backup Disk pool properties and volumes A disk pool inherits the properties of its volumes. Only volumes with similar properties can be added to a disk pool. If properties are specified, the list displays volumes that match the selected properties. Replication source Replication target Select volumes on the storage server to add to the disk pool: Volume Name Available Space Raw Size Replication OST 2.2934 TB Total available space: 2.2938 TB Total raw size: 2.2938 TB	Storage server type:	DELL			
Disk pool properties and volumes A disk pool inherits the properties of its volumes. Only volumes with similar properties can be added to a disk pool. If properties are specified, the list displays volumes that match the selected properties. Replication source Replication target: Select volumes on the storage server to add to the disk pool: Volume Name Available Space OST 2.2934 TB Total available space: 2.2938 TB Cotal raw size: Assile A total available space: A total raw size: A space A total available space: A total raw size:	Disk pool configured for:	Backup		-	
A disk pool inherits the properties of its volumes. Only volumes with similar properties can be added to a disk pool. If properties are specified, the list displays volumes that match the selected properties. Replication source Replication target: Select volumes on the storage server to add to the disk pool Volume Name Available Space Raw Size Replication OST 2.2934 TB 2.2938 TB None Total available space: 2.2934 TB Total raw size: 2.2938 TB	Disk pool properties and v	olumes			
If properties are specified, the list displays volumes that match the selected properties.	A disk pool inherits the pro can be added to a disk po	perties of its volumes. Only ol.	y volumes with simila	r properties	
Replication source Replication target Select volumes on the storage server to add to the disk pool: Volume Name Available Space Raw Size Replication OsT 2.2934 TB 2.2938 TB None Total available space: 2.2934 TB Total raw size: 2.2938 TB	If properties are specified,	the list displays volumes th	nat match the select	ed properties.	
Replication source Replication target Select volumes on the storage server to add to the disk pool: Volume Name Available Space Raw Size Replication OST 2.2934 TB 2.2938 TB None Total available space: 2.2934 TB Total raw size: 2.2938 TB					
Replication target Select volumes on the storage server to add to the disk pool: Volume Name Available Space Raw Size Replication OST 2.2934 TB 2.2938 TB None Total available space: 2.2934 TB Total raw size: 2.2938 TB	Replication source				
Select volumes on the storage server to add to the disk pool: Volume Name Available Space Raw Size Replication Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to the disk pool: Image: Comparison of the storage server to add to th	Benlication target				
Volume Name Available Space Raw Size Replication OST 2.2934 TB 2.2938 TB None Total available space: 2.2934 TB 2.2938 TB Total raw size: 2.2938 TB	Select volumes on the stor	rade server to add to the c	tisk pool:		
Counter Name Available space naw size Neptication OST 2.2934 TB 2.2938 TB None Total available space: 2.2934 TB 2.2938 TB Total raw size: 2.2938 TB	Mal and Malagements	Auglishis Course	Dev Cier (Destadion	
Total available space: 2.2934 TB Total raw size: 2.2938 TB		2 2934 TR	2 2939 TR	None	
Total available space: 2 2934 TB Total raw size: 2 2938 TB					
Total raw size: 2.2938 TB	Total available space:	2.2934 TB			
Z Back Nevts Carcel H	Total raw size:	2.2938 TB			
		C Back	Vevt \ Ca	ncel	Help
					help

11. Enter the **Disk pool name**.

Disk Pool Configuration Wizar	d	×
Additional Disk Pool In Provide additional info details.	formation ormation and verify disk pool configuration	
Storage server:	swsys-63	
Storage server type:	DELL	
Disk pool configured for:	Backup	
Disk pool size		
Total available space:	2.2934 TB	
Total raw size:	2.2938 TB	
Disk pool name:		
USI		
Comments:		
) High water mark:	Low water mark:	
98 📩 %	80 🗾 %	
Maximum I/O streams		
Concurrent read and write jo Limit I/O streams to prevent	obs affect disk performance. disk overload.	
🔲 Limit I/O streams	1 per volume	
-		
	< Back Next > Cancel	Help

12. Confirm that disk pool creation is successful.

Disk Pool Configuration Wizard			×
Disk Pool Creation Performing required task fo	or Disk Pool creation		
Please wait while the wizard complet Sta. Performing tasks Y Creating Disk Pool	es the following task:		
Configuration completed successfully To continue, click Next.	и		
< 1	Back Next >	Cancel	Help

13. Make sure the disk pool is listed.



14. Right-click **NetBackup Management** and select **Storage > Storage Unit**, and then click **New Storage Unit**.



15. For the New Storage Unit, enter a **Storage unit name**, and then specify the **Storage unit type** as **Disk**, the **Disk type** as **OpenStorage (DELL)**, and **Storage unit configured for** as **Backup**. Select the disk pool that was created previous steps, and select the media server that will be used for backup.

New Storage Unit
Storage unit name:
OST_SU
Storage unit type:
Disk 🔽 🔽 On demand only
Disk type:
OpenStorage (DELL)
Storage unit properties
Backup
A storage unit inherits the properties of its disk pool. If properties are specified, only those disk pools that match the specified properties will be available below.
Replication source
Replication target
Select Disk Pool:
OST View Properties
Media Server: C Use any available media server • Only use the following media servers
Media Servers ✓ ost-w2k3r2-04
Maximum concurrent jobs: Maximum fragment size: 4 524288 Megabytes
OK Cancel Help

16. Make sure that the Storage Unit is listed after creation.



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- Policies ost-w2k8r2-04 NetBackup Administration Console File Edit View Actions Help ost-w2k8r2-04: 0 Policies ost-w2k8r2-04 📑 ost-w2k8r2-04 (Master Server) Name Data ... Type Storage Volum... Check... : Activity Monitor E Reports Constant State
 Constant Cate Change... Media ar Media ar Devi Kiew Schedule 📼 Med 🎯 New Schedul ÷ New Cient... Ė Activate
 Manual Backup...

 Screet
 Manual Backup...

 Screet
 Menual Backup...

 Screet
 Scre 📅 Virtual Machine Servers Wault Management
 Access Management 🗄 🦝 Bare Metal Restore Management •
- 17. Right-click Netbackup Management > Policies and click New Policy.

18. Enter a Policy name.



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 Enter the following policy attributes on the Attributes tab: Policy type as MS-Windows (for Windows) or Standard (for Linux); Policy storage as the DR storage unit that was created in previous steps; select Collect true image restore information > with move detection.

🛅 Attributes 🤁 Schedules 🖳 Clients 🖳 Backup Selections	
Policy type: IMS-Windows Destination Image: Ima	Go into effect at: 1/27/2014 1:02:40 AM Backup Network Drives Cross mount points Compression Encryption Encryption
Snapshot Client Perform block level incremental backups Perform snapshot backups Options	Microsoft Exchange Attributes Exchange 2010 DAG or Exchange 2007 replication (LCR or CCR)
Retain snapshot dockops Retain snapshot for Instant Recovery or SLP management Hyper-V server: Perform off-host backup Use: Machine:	Database backup source:

20. On the **Schedules** tab, create three schedules: one for **Full Backup**, a second one for either **Differential Incremental Backup** or **Cumulative Incremental Backup**, and a third one for **Full Backup** with the **Synthetic backup** option enabled.

The schedule should be set so that first a full backup runs, then an incremental backup, and finally a synthetic full backup.

Add New Policy	:y - OST_policy	×
Attributes	s 🤁 Schedules 🖳 Clients 🍋 Backup Selections	
Sun Mon Tue Wed Thu Fri Sat	Schedules Clients Backup Selections Add New Schedule - Policy OST_policy Type of backup: Full Backup Userride policy storage selection: Full Backup Synthetic backup G verride policy volume pool: Accelerator forced rescan E chable indexing for search (Must also be enabled for the policy and client) Schedule type: Any	24 + + + +
	Calendar Retries allowed after runday Frequency: 1 1 1 Instant Recovery: Snapshots and copy snapshots to a storage unit Snapshots only 0K Cancel Help New Delete	operties
	OK Cancel	Help

Change Schedule - Policy OST_policy	
🚯 Attributes 🔀 Start Window 🗟 Exclude Da	ates
Name: Increm Type of backup: Differential Incremental Backup	Destination: Multiple copies Override policy storage selection:
Synthetic backup C Synthetic backup Accelerator forced rescan Enable indexing for search (Must also be enabled for the policy and client) Schedule type:	Override policy volume pool: NetBackup Override media owner: Any
C Lalendar Retries allowed after runday Frequency: Weeks	Retention: Media multiplexing: 2 weeks (level 1) 1 Instant Recovery: 1 Snapshots and copy snapshots to a storage unit 1 Snapshots only 1
	OK Cancel Help

Add New Schedule - Policy OST_policy	×
🚯 Attributes 🚯 Start Window 🚳 Exclude Date	es
Name:	Destination:
synt	Multiple copies Configure
Type of backup:	Uverride policy storage selection:
Full Backup	ST_SU
Synthetic backup	Override policy volume pool:
Accelerator forced rescan	NetBackup
Enable indexing for search (Must also be enabled for the policy and client)	Override media owner:
Schedule type:	Any
C Calendar	Retention: Media multiplexing:
Retries allowed after runday	2 weeks (level 1)
Frequency:	
1 🐳 Weeks 💌	Instant Hecovery:
	Shapshots and copy shapshots to a storage unit Shapshots and copy shapshots to a storage unit
	C Strapshots only
· · · · · · · · · · · · · · · · · · ·	
	UK Cancel Help

- 21. On the **Clients** tab, select the client(s) from which data is backed up.
- 22. On the **Backup Selection** tab, provide the data set that needs to be backed up.
- 23. Make sure that the policy is created successfully.

🛅 Policies - ost-w2k8r2-04 - NetBackup Administra	tion Console									
<u>Eile E</u> dit <u>V</u> iew <u>A</u> ctions <u>H</u> elp										
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ost-w2k8r2-04	OST_policy: Attribu	utes								
📑 ost-w2k8r2-04 (Master Server)	Name		Data	Туре	Storage	Volu	Jm	Check.] F	A Ef
	OST_policy			MS-Wi	OST_SU	Net	Bac		. 3	1/
🖻 🖳 NetBackup Management	L									
🗄 📄 Reports	▲									
	OST_policy: 3 Sche	edules								
Summary of all Policies		2	4	6	8		10	1	2	1.
	Sun	<u> </u>	· · · ·	·····	<u> </u>	·	<u>10</u>	· · · ·	÷	
	Mont +	+ +	+ +	+ +	+	+	+	+	+ +	• •
Character Units	Tuel +	+ +	+ +	+ +	+	+	+	+	+ +	• •
Storage Unit Groups	Wed +	+ +	+ +	+ +	+	+	+	+	+ +	•
Catalog	Thu Thu	+ +	+ +	+ +	+	+	+	+	+ •	•
Host Properties	Fri [+ + 	+ +	+ +	+	+	+	+		
	Sat [
Q Device Monitor	Name	Type				1	Retent	ion	1	Freat
	Full Backup	Full Back	up				2 week	s		1
🖻 😼 Devices		Differen	tial Increme	ntal Backup			2 week	s		1
	🍈 svnt	Eull Back	UD				2 week	-		1
📴 Robots								-		-
- 🛃 Media Servers	•									
Server Group										
	OST_policy: 1 Clier	nts								
Disk Pools	Client name	Hardware		Operating	; System					Res
SAN Clients	📇 ost-w2k8r2-04	Windows-x6	54	Windows2	2008					Off
Storage Servers										
Virtual Machine Servers										
	OST policy: 1 Sele	ctions								
		cuons								

24. Activate the policy before proceeding to backup. Right-click the policy and click Activate.

3.1.2 Backing up using NetBackup virtual synthetic backup

 Before running backup, ensure that you have decided on a backup mode to use: Passthrough or Dedupe. This can be done by setting the RDA mode in the DR Series system command line interface (CLI), as shown in the following example screenshot.

📓 swsys-63.ocarina.local - PuTTY									
[root@SWSYS-63	~]# rdashowc.	lients							
RDA Client(s)		Type	Plugin	OS	Backup Software	Last Access			
nection(s)	Mode								
OST-W2K8R2-04		RDS	2.1.243	Windows Server 2008 R2	NetVault 9.2 Build 16	Aug 27 02:35:56			
	Default								
OST-W2K8R2-02		OST	2.1.270	Windows Server 2008 R2	NetBackup 7.500.12	Aug 27 02:35:29			
	Dedupe								
Sree-Win-01		OST	2.1.243	Windows Server 2008 R2	NetBackup 7.1.2011	Aug 27 02:35:50			
	Dedupe								
Srinivas-W2K8-		OST	2.1.215	Windows Server 2008 R2	NetBackup 7.0.2010	Aug 27 02:36:07			
	Dedupe								
[root@SWSYS-63	~]# rdaupdate_c.	lientname	OST-W2K8R2-04	mode dedupe					
Rapid Data Acc	ess (RDA) client OS'	Γ-W2K8R2-04 τ	with mode Dedug	pe added successfully.					
[root@SWSYS-63	~]# rdaupdate c.	lientname	OST-W2K8R2-04	mode passthrough					
Rapid Data Acc	ess (RDA) client OS'	Γ−₩2K8R2−04 τ	ith mode Pass	-through updated successfully.					
[root@SWSYS-63	~]#								

Note: You can schedule the backups or run them at a convenient time. This procedure uses a manual backup configuration.

 Under Netbackup Management > Policies, right-click the policy created in the previous procedure and select Manual Backup to run the backup manually.

Eile Edit View Actions Help	
🕒 • 🔃 🎒 米 🕫 🗙 % 🗈 🛍 🌲	i V X 2 3 3 3 3 2 ~ 9 # 4 * 4 # E 🖆 🔈 🦻 📓
ost-w2k8r2-04	OST_policy: Attributes
oxt-w2k8c2-04 (Master Server) oxt-w2k8c2-04 (Master Server) Activity Monitor WetBackup Management Device Monitor Device Monitor Device Monitor Catalog Device Monitor Device Monitor Device Monitor Device Monitor Device Monitor Device Monitor Device Servers Disk Aray Hosts Disk Pools Disk Aray Hosts Disk	OST_polky: Attributes Name Dost_polky: OST_polky: OST_polky: OST_polky: OST_polky: Manual Backup Start backup of polky: Start backup OST_polky: Start backup of polky: Select a schedule and one or more clents to start the backup. To start a backup for all clents, press OK without selecting any clents. OST_polky: OST_polky: Selections Backup Selections Backup Selections Backup Selections
	Master Server: ost

3. Run a manual **Full Backup** and check the status in the Activity Monitor. Double-click the job to see the detailed status.

🛅 Activity Monitor - ost-w2k8r2-04 - NetBackup A	dministration Console
Eile Edit View Actions Help	
<u>.</u> ∃• ⊡ @ ※∞X % № @ #	. ▼ ೫ 12 13 13 13 1 1 1 1 1 1 2 2 2 3 8 3 8 3 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
ost-w2k8r2-04	ost-w2k8r2-04 : Topology
oct-wcka2-04 (Nactor Server) Activey Monitor Neesochy Management Neesochy Management Strage Units Strage Servers Strage Servers	Job Details:1048 Job State: Active Job Details:1048 Job State: Active Job DVerview Detailed Statu: Job Overview Detailed Statu: Job DV Type Job State: State: Job DT Type Job State: State: Job Drage Cle Done I/27/2014 2:00:27 AM - connecting: Connect time: C0:00:00 J/27/2014 2:00:31 AM - Into Sphika: 32pid=47721 Backup stated J/27/2014 2:00:31 AM - Into Sphika: 32pid=47721 Backup stated J/27/2014 2:00:31 AM - Into Sphika: 32pid=47721 Backup stated J/27/2014 2:00:31 AM - Into Sphika: 32pid=47721 Backup stated J/27/2014 2:00:31 AM - Into Sphika: 32pid=47721 Backup stated J/27/2014 2:00:31 AM - Into Sphika: 32pid=47721 Backup stated J/27/2014 2:00:33 AM - Into Sphim(3-272) state Backup J/27/2014 2:00:34 AM - Into Sphim(3-272) state Backup J/27/2014 2:00:34 AM - Into Sphim(3-272) state Backup J/27/2014 2:00:34 AM - Into Sphim(3-272) state Backup J/27/2014 2:00:35 AM - I
	Jobs Services Processes Drives
·	Master Server: oct-uu/k8/2-04 Conn

4. Run one or more configured **Incremental** backups to generate a set of backups that can make a synthetic full backup.



5. Then, run a **Full Backup** with the **synthetic backup** option enabled.

<u>File E</u> dit <u>V</u> iew <u>A</u> ctions <u>H</u> elp										
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ost-w2k8r2-04	OST_policy: Att	ributes								
ost-w2k8r2-04 (Master Server)	Name		Data	Туре	Storage	Volum	Check J	P A Effect	BCT	C E Coll
Activity Monitor	OST policy			MS-Wi	. OST SU	NetBac	,) 1/27/2	M	No
🖻 🛄 NetBackup Management					-				_	
E Reports	•									
🖻 💁 Policies	OST policy: 3.5	ichedules								
- 🚳 Summary of all Policies		0	4	-		10	10	14	10	
OST_policy		<u> </u>	4	- <u>-</u>		- <u>10</u>	<u>12</u>	. 14	10	
🖃 📟 Storage	Mon +	Manual Bar	kun				x	∎ • •	+	+ +
- Storage Units		- Tantaar bac	Kup					• • •	+	+ +
Storage Unit Groups	Wod +	Start backup	o of policy:	OST_policy				+ + +	+	+ +
Storage Lifecycle Policies	Thut +	Schodulacy			Cliente			+ + +	+	+ +
Catalog	Frit +	Eull Backur	\		lost-w2k8	r2-04		+ • •	+	+ +
Host Properties	Sat +	Increm	,		OSC WEND	201		+ • •	+	+ +
E By Media and Device Management		synt								· · ·
	Name							Frequency	M Sto	orage
	Full_Backup							1 Week	1	
	Increm							1 Week	1	
Bobate	😍 synt							1 Week	1	
Media Servers		Select -	a schedule a	nd one or m	nore clients	to start the l	backup.			_
Server Group	<u> </u>	To start a h	ackup for a	l cliopte pre	acc OK with	out colocting	onu dionte			
Topology	OST policy: 1 C	i o start a L	autup ror a	r cilerics, pre	555 OK WILLI	Jucseleccing	any ciencs.			
- Disk Pools	Client name		_		-			Resiliency		
SAN Clients	ost-w2k8r2-		L	OK	Car	ncel	Help	Off		
- 🚷 Credentials	COS WENDE	1								
Disk Array Hosts										
- 👰 NDMP Hosts										
Storage Servers										

6. Confirm that the final full backup is synthesized.

Note: The throughput of the final backup should be much faster as it synthesizes the full and incremental backups.

Job Details:10	60					×		
Job ID: 1060		Job State: Done (Successful)						
Job Overview	Detailed Status					❖		
Status:	Job PID: Storage unit: Media server: Transport type:	7956 OST_SU ost-w2k8r2-04 LAN	Started: Elapsed: Ended: KB/Sec:	1/27/2014 00:00:18 1/27/2014 3078125	7:29:46 AM 7:30:04 AM			
1/27/2014 7 1/27/2014 7 1/27/2014 7 1/27/2014 7 1/27/2014 7 1/27/2014 7 1/27/2014 7 1/27/2014 7 1/27/2014 7	1/27/2014 7:29:49 AM - granted resource MedialD=@aaabv;DiskVolume=0ST;DiskPool=0S 1/27/2014 7:29:50 AM - end Request Resources; elapsed time: 00:00:03 1/27/2014 7:29:50 AM - end Synthetic, Execute Script; elapsed time: 00:00:04 1/27/2014 7:29:50 AM - begin Organize Readers 1/27/2014 7:29:50 AM - begin synthetic witer to est wakforz 04_100000001 1/27/2014 7:29:50 AM - begin synthetic witer to est wakforz 04_100000001 1/27/2014 7:29:50 AM - begin synthetic reader 5 for 1 extent from ost-w2k8r2-04_139083539 1/27/2014 7:29:50 AM - sending extent 0 to reader 5 1/27/2014 7:29:50 AM - end Organize Readers; elapsed time: 00:00:00							
Current kiloby Current files w Current file:	ites written: 17142 vritten: 0	2080 Esti Esti	mated Kilobj mated Files:	ytes:	Troubleshoote	:		
Percent	t Complete: 100% 🖡		0	minutes rem	aining			
Print			Не	elp	Close			

4 Configuring VTL type containers for use with Symantec NetBackup

4.1 Creating and configuring NDMP target container(s) for NetBackup

4.1.1 Creating the NDMP VTL container

Before you begin, ensure that the NetBackup OEM patch is installed. Contact Dell Support for the instructions.

1. Create a VTL container in the DR Series system GUI by selecting **Containers** in the left navigation area, and then clicking **Create** at the top of the page.

				administrator (Log	out) Help
Containers			(2) Create	Edit Delete Displa	ay Statistics
Number of Containers: 2				Container Path:	/containers
Containers	Files	Marker Type	Access Protocol Enabled	Replication	Select
backup	0	Auto	NFS, CIFS	Not Configured	0
intvm05iscsi	31	Networker	VTL ISCSI	Not Configured	0
	Containers Number of Containers: 2 Containers backup intrm05iscsi	Containers Number of Containers: 2 Containers Dackup 0 intvm05iscsi 31	Containers Number of Containers: 2 Containers Files Marker Type backup 0 Auto intvm05iscsi 31 Networker	Containers 2 Create Number of Containers: 2 Containers Refer Type Access Protocol Enabled Dackup 0 Auto NFS, CIFS Intvm05iscsi 31 Networker VTL ISCSI	Containers 2 Create Deske Deske Number of Containers: 2 Container Path: Container Path: Containers Files Marker Type Access Protocol Enabled Replication Dackup 0 Auto NFS, CIFS Not Configured Intrm05iscsi 31 Networker VTL ISCSI Not Configured

2. Enter a container name, select the Virtual Tape Library (VTL) check box, and then click Next.

ontainer Name		* = required field
1	Max 32 characters, including only letters, numbers, hyphen, and underscore. Name must start with a letter.	
Container Nam	e": NDMP-VTL	
rtual Tape Library (VTL): 🗹 🙎	
		0

3. Select the **Is OEM** checkbox, **NDMP Access Protocol** radio button, **Unix Dump Marker Type** and enter the **Access Control** IP address. Click **Next**.

Container Wizard - Create N	ew Container					
Configure Virtual Tape Libra	ry					* = required fields
					Container Name a NDMP-VTL	nd Type
Tape Size:	800GB 800GB	O 400GB	O 200GB		VTL	
	O 100GB	○ 50GB	○ 10GB			
2 Access Protocol:	NDMP	O iscsi	O No Access			
3 Access Control:	FQDN or IP			\supset		
4 Marker Type:	O Unix Dump					
	O None					
						5
				< Back	Cancel	Next >

4. Click **Create a New Container** to finish container creation.

Container Wizard - Create New Container	
Configuration Summary	* = required fields
Container Name and Type	Virtual Tape Library
Container Name: NDMP-VTL	OEM: yes
Connection Type: VTL	Tape Size: 800gb
	Access Protocol: NDMP
	Access Control: 10.8.238.145
	Marker Type: Unix_Dump
	< Back Cancel Create a New Container

4.1.2 Setting up NetBackup to use the newly created NDMP VTL

1. Open the NetBackup Administration Console, go to **Media and Device Management** > **Credentials**, right-click **NDMP Hosts**, and select **New**.



2. Enter the NDMP host name of the filer from which you want to back up and click **OK**.

IDMP Host Name: Isilon	Add NDMP H	ost	
Isilon	OMP Host Nam	e:	
	silon		

3. Enter the backup user logon information for the filer and click **OK**.

NDMP Host: dr4-interop-a7.labdomain1.bakbone.com	
Credentials	
Use global NDMP credentials for this NDMP host	
Use the following credentials for this NDMP host on all media server:	;
Username:	
backup_user	
Password:	-
****	_)
Confirm Password:	\prec
жжиских	_)
Use different credentials for this NDMP host on each media server (Use Advanced Configuration) To configure individual media server credentials or to override global NDMP host level credentials, use Advanced Configuration.	and
Advanced Configuration	

4. Click Add again and specify the DR Series system host name and click OK.



5. Enter the backup user logon information for the DR Series system, and click **OK**.

Add NDMP Host: dr4-interop-a7.labdomain1.bakbone.com
NDMP Host: dr4-interop-a7.labdomain1.bakbone.com
Credentials
C Use global NDMP credentials for this NDMP host
Use the following credentials for this NDMP host on all media servers Username:
backup_user
Password:

Confirm Password:

 Use different credentials for this NDMP host on each media server (Use Advanced Configuration) To configure individual media server credentials or to override global and NDMP host level credentials, use Advanced Configuration.
Advanced Configuration
OK Cancel Help

6. Click the master server in the navigation pane, and then click Configure Storage Devices.



7. Click Next>.

Device Configuration Wizard		×
	Welcome to the Devi Wizard.	ce Configuration
	This wizard configures storage device uses device serialization to configure r	s for use with NetBackup. This wizard obotic libraries and drives.
	Before starting, physically attach your perform all configuration steps specifie vendors.	storage devices to the server and d by the device or operating system
	To begin, click Next.	For assistance, click Help.
	< Back Next	Cancel Help

8. Click Change, select the NDMP Host check box, and click OK. Click Next>.

evice Configuration	Wizard	×
Device Hosts Specify the H	nosts on which to auto-discover/configure devices.	
If you are running this Only hosts that are (need to be scanned Device Host 2k8r2intvm0*	wizard for the first time, please add and check all hosts with attached Thange Device Host Device host: 2k8r2intvm01 Administrator Assisted Discovery This device host controls the following types of devices: NDMP host ACS robot TLM robot OK Cancel Help	devices.
Configure Drive N	Iame Rules To start device of	detection, click Next.
	< Back (Next>) Cancel	Help

9. Ensure that the DR's host name is selected and click **Next**.

ice Configuration Wizard	
NDMP Hosts Select the NDMP hosts on which to configure devices by clicking the adjacent checkbox.	
IDMP hosts:	
NDMP Host	New
Isilon	
✓ dr4-interop-a7.labdomain1.bakbone.com	Change
1	Delete
2	
	11-1-



10. Verify that the VTL was detected successfully and click **Next**.

Device Configuration Wizard 🛛 🗙
Scanning Hosts Wait while devices are auto-discovered.
Auto-detection has completed for all hosts checked.
Progress:
Host Operation Status
2k8r2intvm01 Scanning for devices. Detected 10 tape drive path(s) and 1 robot(s).
To view detected devices, click Next.
< Back Next > Cancel Help

11. Click Next.

evice Configura	ation Wiza	ard					×	
SAN Client Review	s the SAN (Clients	NetBackup ha	s found.				
If you have a SA	AN Client th	at does	not appear in the	list, use the Add bu	utton to mar	wally add	it.	
Note: Adding a by the SAN Clier SAN connectivit	SAN Client nt. You mus ty.	in this v st first h	vay will only inform ave performed all	NetBackup to peri the physical attach	form a scan ment and in:	for FT Ta stallation s	rget Devices seen steps necessary for	
					Preferer	ices	Add	
SAN Clients		-						
Name		State		Usage Preference	ces N	Num FT Media Servers		
Fibre Transport	Devices se	en by th	ne selected SAN (Client:				
Client HBA	Media Se	rver	Server HBA S	Server LUN		Device	State	
				Pack Nevt		Cancel		

12. Click Next.

f you have hysically	e a backup device attached, and tha	e that does not a t all installation s	ppear in this list, c teps specified by th	ancel this wizar ne device and o	d and verify that th perating system v	ne device is rendor have
een penc	inicu.					Properties
Device			State	Serialized	Limitations	
📄 DELL	. DR_L700	0104	Configured	Yes	None	
🗐 IBM	ULT3580-TD4	0104	Configured	Yes	None	
🗐 IBM	ULT3580-TD4	0104	Configured	Yes	None	
🗐 IBM	ULT3580-TD4	0104	Configured	Yes	None	
🗐 IBM	ULT3580-TD4	0104	Configured	Yes	None	
al inv	111 TOE00 TO A	0104	C	v	NI	-
lost and d	device path config	uration informati	on for selected dev	/ice:		
Host	NDMP	Host I	Path	Port	Bus Targe	t LUN
2k8r2int	vm01 dr4-inte	rop-a7.labd [DR_L700-6788WJ	0	0 7	0

13. Click Next.

Device Configuration Wizard	×
Drag and Drop Configuration Verify the drive configuration is correct.	
If you need to make any changes, simply drag a drive to its proper location. Drives in robotic appear under their robotic library. Drives not in libraries should appear under "Standalone Dr drives are ordered according to how they appear in the library.	libraries should ives''. Make sure
Devices can be enabled and disabled by clicking the adjacent checkbox.	Properties
Robot 0 <2k8r2intvm01> [DELL DR_L700 0104] Standalone Drives [or drives removed from robot]	
To continue, click Next.	
< Back Next > Cancel	Help

14. Click **Yes** to confirm you want to continue.

Device Configuration Wizard
Drag and Drop Configuration Verify the drive configuration is correct.
If you need to make any changes, simply drag a drive to its proper location. Drives in robotic libraries should appear under their robotic library. Drives not in libraries should appear under "Standalone Drives". Make sure drives are ordered according to how they appear in the library.
Devices can Device Configuration Wizard
Image: Star After this point, the device configuration changes will be committed. The original configuration cannot be restored once these change have been made. Do you want to continue?
Yes No
To continue, click Next.
< Back Next > Cancel Help

15. Click Next.

Device Configuration	n Wizard
Updating Dev Please wa	ce Configuration while NetBackup updates the device configuration.
Update complete.	
Operation	Host Stat
Y Committing de	Uone.
To continue, click	ext.
	< Back Next > Close Help

16. Click Next.

Device Configuration Wizard	×
Configure Storage Units You can make the devices available to NetBackup by configuring storage	e units.
A storage unit is a logical grouping of one or more storage devices attached to a server. In orr to write to the devices attached to the NetBackup server, a storage unit must be configured f	der for NetBackup or these devices.
Check devices that you want configured as NetBackup storage units on Master Server	Properties
I 2k8r2intvm01-hcart-robot-tid-0-dr4-interop-a7.labdomain1.bakbone.com	
< Back Next > Close	Help

17. Click Finish.

Device Configuration Wizard	×
	Finished!
	You have successfully completed the NetBackup Device Configuration Wizard.
	You may view or change current configuration settings within Device Management or Storage Unit Management.
	To exit the wizard, click Finish.
	< Back Finish Close Help

18. Go to Media and Device Management > Devices and then select Robots > Inventory Robot.



19. Select the Robot you want to inventory. Select the **Update Volume Configuration** and **Preview Changes** options, and then click **Start**.

k8r2intvm01 - Robot Inventory	
elect robot	Inventory operation
Device Host:	C Show contents
2k8r2intvm01	C Compare contents with volume configuration
lebet:	Children to a start
TLD(0) - 2k8r2intvm01	Update volume configuration
	Advanced Options
	Preview changes
	Empty media access port prior to update
Start Stop	
esults	
cours	A
	-
	<u>_</u>
<u>(</u>	<u>></u>
	Clear Results

20. When it completes, click **Yes**.

Select robot Device Host: Zk8r2intvm01 Compare contents Compare contents Compare contents with volume configuration Compare contents Compare contents with volume configuration Compare contents Compar	2Kor2intemo1 - Robot Inventory	
Device Host: 248/20ntvm01 Compare contents Compare contents with volume configuration Compare contents with volume configuration Advanced Options Proview changes Empty media access port prior to update Start Stop Results Compare contents with volume configuration Compare contents Compare contents with volume configuration Compare contents C	Select robot	Inventory operation
Robot: Compare contents with volume configuration Robot: Update volume configuration ILD(0) - 2k8r2intvm01 Update volume configuration Advanced Options Preview changes Empty media access port prior to update Start Stop results results results recommended changes Proposed Change(s) to Update the Volume Configuration recommended changes Proposed Change(s) to Update the Volume Configuration recommended changes Proposed Change(s) to Update the Volume Configuration recommended changes Proposed Change(s) to Update the Volume Configuration recommended changes Proposed Change(s) to Update the Volume Configuration recommended changes Proposed Change(s) to Update the Volume Configuration recommended changes Proposed Change(s) to Update the Volume Configuration recommended changes Logically add new media 8W/1000 (barcode 6788W/001) to robot stol 1. recommended changes Logically add new media 8W/1005 (barcode 6788W/005) to robot stol 2. recommended	Device Host:	C Show contents
Robot: ILD(0) - 2k8r2intvm01 Image: Configuration Advanced Options Image: Configuration Advanced Options Image: Configuration Image: Configuration Image: Configuration Start Stop Empty media access port prior to update Image: Configuration Image: Configuration Image: Configuration Image: Co	J2K8r2intvmu1	C Compare contents with volume configuration
Advanced Options	Robot:	Update volume configuration
		Advanced Options
Image: Start Stop Results		Auvanceu Options
Empty media access port prior to update Start Stop Results Generating list of recommended changes Proposed Change(s) to Update the Volume Configuration Logically add new media 8W/1002 (barcode 6788W/1001) to robot stol 1. Logically add new media 8W/1002 (barcode 6788W/1001) to robot stol 2. Logically add new media 8W/1005 (barcode 6788W/1001) to robot stol 4. Logically add new media 8W/1005 (barcode 6788W/1001) to robot stol 4. Logically add new media 8W/1005 (barcode 6788W/1001) to robot stol 5. Logically add new media 8W/1005 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1005 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1005 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcode 6788W/1001) to robot stol 7. Logically add new media 8W/1006 (barcod		Preview changes
Start Stop Results		Empty media access port prior to update
Logically add new media 8WJ00A (barcode 6788WJ00A) to robot slot 10. Update volume configuration?	2/2/2015 2:04:35 PM > Inventoru & Update for TL	D(0) 01 0.01 01
Ipdate volume configuration? Yes No Clear Result:	Generating list of recommended changes Proposed Change(s) to Update the Volume Configu- Eugically add new media 8WJ001 (barcode 6788W Logically add new media 8WJ002 (barcode 6788W Logically add new media 8WJ003 (barcode 6788W Logically add new media 8WJ005 (barcode 6788W Logically add new media 8WJ005 (barcode 6788W Logically add new media 8WJ005 (barcode 6788W Logically add new media 8WJ007 (barcode 6788W	U(0) on 2K8/2/Intvm01 wration W001) to robot slot 1. W002) to robot slot 2. W003) to robot slot 3. W003) to robot slot 4. W005) to robot slot 5. W006) to robot slot 5. W006) to robot slot 5. W007) to robot slot 8. W007) to robot slot 7. W008) to robot slot 7.
Jpdate volume configuration? Yes No Clear Result:	Generating list of recommended changes Generating list of recommended changes Proposed Change(s) to Update the Volume Configu- Logically add new media 8WJ001 (barcode 6788W, Logically add new media 8WJ002 (barcode 6788W, Logically add new media 8WJ005 (barcode 6788W, Logically add new media 8WJ005 (barcode 6788W, Logically add new media 8WJ005 (barcode 6788W, Logically add new media 8WJ008 (barcode 6788W, BWJ08W, barcode 6788W, Logically add new media 8WJ08W, BWJ	U(U) on 2K8/2/Internal uration VJ001) to robot slot 1. VJ002) to robot slot 2. VJ003) to robot slot 3. VJ003 to robot slot 4. VJ005) to robot slot 5. VJ006) to robot slot 5. VJ008) to robot slot 6. VJ009) to robot slot 7. VJ008) to robot slot 8. VJ009) to robot slot 9. VJ004) to robot slot 9. VJ004) to robot slot 9.
class Lub	Generating list of recommended changes Froposed Change(s) to Update the Volume Configu- Logically add new media 8WJ001 (barcode 6788W, Logically add new media 8WJ002 (barcode 6788W, Logically add new media 8WJ003 (barcode 6788W, Logically add new media 8WJ005 (barcode 6788W, Logically add new media 8WJ005 (barcode 6788W, Logically add new media 8WJ005 (barcode 6788W, Logically add new media 8WJ008 (barcode 6788W, Logically add new media 8WJ08W, Barcode 6788W, Barcode 6788W, Barcode 6788W, Barcode 6788W, Barcode 6788W, Barcode 6788W, Barcode 6788W, Barcode 6788W, Barcode 6788	U(0) on 2K8/2/intym01 v/J001) to robot slot 1. v/J002) to robot slot 2. v/J003) to robot slot 3. v/J003 to robot slot 4. v/J005) to robot slot 5. v/J007) to robot slot 5. v/J007) to robot slot 7. v/J008) to robot slot 8. v/J009) to robot slot 8. v/J009) to robot slot 9. v/J004) to robot slot 9. v/J004) to robot slot 10.
	Generating list of recommended changes Generating list of recommended changes Proposed Change(s) to Update the Volume Configu- Logically add new media 8WJ001 (barcode 6788W Logically add new media 8WJ002 (barcode 6788W Logically add new media 8WJ005 (barcode 6788W Logically add new media 8WJ009 (barcode 6788W Update volume configuration?	VJ001) to robot slot 1. VJ001) to robot slot 1. VJ002) to robot slot 2. VJ003) to robot slot 2. VJ003 to robot slot 3. VJ005) to robot slot 5. VJ006) to robot slot 5. VJ008) to robot slot 5. VJ008) to robot slot 8. VJ009) to robot slot 9. VJ008) to robot slot 9. VJ004) to robot slot 9. VJ004) to robot slot 10.

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21. Click Close.

Select robot		Inventory operation
Device Host:		C Show contents
2k8r2intvm01	-	C Compare contents with volume configuration
Robot:		Compare concerns with volume comigaration
TLD(0) - 2k8r2intvm01	-	 Update volume configuration
		Advanced Options
		Preview changes
		I Empty media access port prior to update
1		
Start Stop		
Results		
Media ID 9W/J001 9W/J002 9W/J003 8W/J004 8W/J005 8W/J005 8W/J006 8W/J006 8W/J006 8W/J006	Slot 1 2 3 4 5 6 7 8 9 10	
Volume configuration successfully up	pdated.	
<u>r</u>		F
4		Lear Results

22. Select NetBackup Management > Policies and then select New Policy.



23. Enter a policy name for the backup job and click **OK**.

Add a New Policy		×
Policy name: 1		
Backup		
Use Policy Configuration	Wizard.	
2 OK	Cancel	Help

24. Select **NDMP** for the **Policy Type**, and select the **Allow Multiple Data Streams** check box on the Attributes tab. Click the **Schedules** tab.

Policy type:	NDMP	Go into effect at 2/ 2/2015 - 2/09:14 PM -
Data classification	Alle data alguation times	T Following
U dia classification.		Compression
Policy storage:	Any Available	Encryption
Policy volume pool 2	NetBackup	Collect disaster recovery information for:
		Bare Metal Restore
Take checkpoints every	0 🕂 mindes	Collect true mage restore information
Limit inhe ner policer		
The case post per porcy.	Hicker number is creat	et
Job priority:	0 ≟ priority)	
Media Owner:	Ary	Lise Accelerator
		Keyword phrase:
Snapshot Client and Replicati	on Director	Enable indexing for search
Fertorm block level increa	nentai backups	(Must also be enabled for the schedule and client)
Use Replication Director		maxing server.
F Perform snapshot backup	c Options .	Enable optimized backup of Windows deduplicated volumes
Fletain snapshot for in	stant Recovery or SLP management	Microsoft Exchange Attributes
F Hyper-V server.		Exchange DAG or Exchange 2007 replication (LCR or DCR)
Perform off-hout back	up	Database backup strates
Use		
Machine		Preferred verver list. (Exchange DAG only)

25. Click New on the Schedules tab.

Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media Inc	Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media In			2		4		6		8		10		12		14		16		18		20		22	
Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media Inc	Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media Inc	1	1			V.	12		1				520	-	22		2		5				53	1	- 53
Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media Inc	Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media In					1	÷.	0	÷.	- 2						2	÷.	-	- 5						2
Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media Inc	Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media Inv								-																
Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media Inv	Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media In							-										-							
Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media In	Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media In	•	•	•			-	•	-	•				•			-	•		•		•	•		
a Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media In	Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media In	•	•	•		•	1		•	•	•	•	•	•	•	•			- 1	•	1	•	•		•
Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media In	Type Retenti Freque Media Storage Volume Fail all Start Synthetic Accele Disk only Media In																								
			11	Type	R	eteriti.	Fre	que	Med	5a	Stora	90 1	Volume	Fa	il all	Sta	it	Syri	hetic	Accel	e	Disk on	ф М	eda	In
		-	11	Type	R	etenti.	Fre	que	Med	5a	Stora	ge I	Volume	Fa	i al	Sta	it	Syn	hetic	Accel	•	Disk on	ф М	eda	In
]1	Type	R	etenti	Fre	que	Med	5a	Stora	ige 1	Volume	Fa	i al	Sta	ut	Syn	hetic	Accel	e	Disk or	¢y M	eda.	In
			1	Type	R	etenti	Fre	que .	Med	5a	Stora	ige 1	Volume	Fa	i al	Sta	irt	Syri	hetic	Accel	e	Disk on	ey M	eda.	In
			1	Type	R	etenti	Fre	que	Med	5a	Stora	ige 1	Volume	Fa	i al	Sta	ıt	Syrv	hetic	Accel	e]	Disk on	iy M	edia	In
			1	[ype	R	etenti	Fre	que .	Med	5a	Stora	ige 1	Volume	Fa	i al	Sta	ıt	Syn	hetic	Accel	•	Disk on	dy M	leda	In
			1	[ype	R	eleriti	Fre	que	Med	<u> 5</u> 3	Stora	ige 1	Volume	Fa	i al	Sta	ut	Syn	hetic	Accel		Disk or	ф М	ledia .	In
			1	Гуре	R	eteriti	Fre	que	Med	5a	Stora	ige I 1	Volume	Fa	i al	Sta	it	Syn	hetic	Accel	e	Disk or	ф М	ledia	In
			1	Type	R	eteriti	. Fre	que	Med	5a	Store	ige 1	Volume	Fa	il al	Sta	ut	Syri	hetic	Accel	e]	Disk on	iy M	ledia	In
			1	Гуре	R	eteriti	Fre	ique	Med	Śa	Stora	ige 1	Volume	Fa	il al	Sta	ıt	Syn	hetic	Accel	e	Disk or	ф М	eda	In
			T	Гуре	R	eteriti	Fre	ique	Med	5a	Stora	ige 1	Volume	Fa	i al	Sta	rt	Syn	hetic	Accel	e	Disk on	њ м	edia .	In
		2	T	Гуре	R	eteriti	Fre	ique	Med	5a	Stora	ige 1	Volume	Fa	i al	Sta	it	Syn	hetic	Accel	•	Disk on	6 M	eda	In
		2	1	Гуре	R	eteriti	Fre	ique .	Med	5a	Store	92e 1	Volume	Fa	d al	Sta	ut	Syn	hetic	Accel		Disk on	4) M	ledia	. In
			1	[ype	R	leteriti.	. Fre	oque	Med	59	Stora	ige 1	Volume	Fa	i al	Sta	ut	Syn	hetic	Accel	e	Disk or	аў і М	eda .	In
		9	a	Type	R	letenti	. Fre	oque	Med	5a	Stora	ige 1	Volume	Fd	i al	Sta	ut	Syn	hetic	Accel	e	Disk or	аў і М	eda	In
			1	Type	R	eteniti.	. Fre	oque	Med	5a	Store	ige 1	Volume	Fa	d al	Sta	ut	Syn	hetic	Accel	e	Disk or	ay M	eda	In

26. Select **Full Backup** for the initial backup, enter a name, and click **OK**.

ame:	Destination
ut	T Multiple copies Configure
ipe of backup:	C Override policy storage selection:
ull Backup 🔄	×
al Backup	Bveride policy volume pool
umulative Incremental Backup	NetBackup 👻
Enable indexing for search (Must also be enabled for the policy and	Override media owner:
Schedule type:	Any
C Calendar	Retention: Media multiplexing
F Retries allowed after runday	2 weeks (level 1)
Frequency:	Instant Recovery:
1 - Weeks	C Snapshots and copy snapshots to a storage unit
	C Snapshots only
	3

27. Verify the results, and click the **Clients** tab.

Attribu	tes (🕑 Scł	ed les	-	Client) c	y Baci	kup Se	election	n=														
		2	G	4		6		8		10		12		14		16		18		20		22		1
n[1												-									
n[<u> </u>		1	- <u>-</u>						÷.	2		- ÷	-				-	÷.	2	
e																							-	
al																								
4								-						4	-								-	
a l	•	•	•	•	•	•	•	•	•	•	•		•		•	•	•	•	•	•			•	
Full		Full Ba	c 2	weeks	11	Veek	1					C	ontinu	0									No	
Ful		Full Ba	° 2 1	weeks	1	Veek	1					C	minu					PRO 					No	
Ful		Ful Ba		weeks	1	Veek	1					0	ninu	•									No	

28. Click New... on the Clients tab to specify the client you want to backup.

ent name	Hardware	Operating System	Resiliency	Indexing	
Netent onerating system with	en adding or changing a client		New	Datas 1	Grand
Detect operating system wh	en adding or changing a client.		New	Delete	Propert

29. Enter the name of the filer and click outside of the edit box.

	-			
🔄 Clients 🔄 Backup Selectio	ns) 💋			
Hardware	Operating System	Resiliency	Indexing	
1				
120 V 12 12 12			1	100
adding or changing a client.		New	Urefete	Propertie.
	Clients Backup Selectio	Clients Backup Selections 2 Hardware Operating System	Clients Backup Selections	Clerct Backup Selections 2

30. Select NDMP, NDMP in the drop down menu, and click OK. Then, click the Backup Selections tab.

Sent name	Hardware	Operating System	Bestiencu	Indexing
Ision	Tradinare	Coperating official	Off	Yes
	Client Hardware and O Select the he Mont also (Must also 2	peraking System ardware and operating system p dexing for search o be enabled for the policy and sch	edule) rcel Help	
Detect operation sustem			1	

31. Click New... and enter the path to the location you want to back up. Click OK.

Change Policy - Backup				
🔳 Attributes 🕀 Schedules 🛤 Clients 🙆 Backup Sek	ctions			
(Dela Coloria				
/fs/lab/DMA4/testdata/savings				
V				
-				
		New	Delete Rename	Up Down
		2	OK	Cancel Help
		-		

32. Right-click the policy that you just added and select Manual Backup... to start the backup.



To start a backup for all clients, press OK without selecting any clients.

Server: 2k8r2intvm01

Start backup of policy: Backup
Schedules:

Clients:

Ful

OK Cancel Help

X

34. Select the **Activity Monitor** in the navigation pane to watch the progress of the backup job.



35. Select File > Backup, Archive, Restore to start the restore process.


36. Select File > Specify NetBackup Machines and Policy Type.

Backup, Archive, and Restore - NetBackup - [Rest	ore: Server: 2k8r2intvm01 Source Client: fa
File Edit View Actions Window Help	
Select Files and Folders to Back Up Select Files and Folders to Restore	w Status 2/2/2016 3:05:43 PM
NetBackup Client Properties	
a A Login as New User	
View Status	1
Glose Ctrl+F4	
*	<u> </u>
All Folders	
	Name Time Backed Up
and the second second have	and such a second

37. Select the Clients you want to restore to and from and click **OK**.

pecify Net	Backup Machines and Policy Type	
Server to u	ise for backups and restores:	
2k8r2intvr	n01 👱	Edit Server List
Source cli	ent for restores (or virtual client for backups):	Edit Client List
Isilon		Search VM Clients
Destination	client for restores:	
Isilon]
Policy type	for restores:	5
NDMP]
Date / tin	ne range:	1
From:	2/ 2/2015 💌 3:09:55 PM 💌	
	✓ Oldest available	
To:	2/ 2/2015 💌 3:09:55 PM 💌	
	✓ Newest available	
	ОК	Cancel Help

38. Select the backup you want to restore (green check mark for a full backup). Select the checkbox of the data you want to restore in the bottom left pane. Click the restore icon button in the left toolbar.



39. Select the location you want to restore to and restore options. Click Start Restore.

Destination: /ifs/lab/DMA4/testdata/sa			
/its/lab/DMA4/testdata/sa			
	ivings/		Browse
Restore individual folders ar	nd files to different loc	ations (double-click to m	nodify)
Source	Destination	Time Backed Up	
/ifs/lab/DMA4/testdata/sa	avings/	2/2/2015 2:23:42 PM	2/2/2015 2:
Create and restore to a new Destination for virtual hard d	ı vitual hard disk file disk file:		Properties
Create and restore to a new Destination for virtual hard d tore Options Testore without access-con Virguerification and force re) virtual hard disk file fisk file: htrol attributes (Window	ws clients only)	Properties
Create and restore to a new Destination for virtual hard d tore Options Testore without access-con Skip verification and force re orce rollback even if it dest	virtual hard disk file fisk file: atrol attributes (Window ollback trovs later snapshots	vs clients only]	Properties
Create and restore to a new Destination for virtual hard d tore Options Testore without access-con Skip verification and force re orce rollback even if it dest a destination file already exit	v virtual hard disk file disk file: htrol attributes (Window ollback troys later snapshots sts:	ws clients only)	Properties
Treate and restore to a new Destination for virtual hard d tore Options Hestore without access-con Skip verification and force re Force rollback even if it desi a destination file already exist Dyerwrite existing files	v virtual hard disk file disk file: atrol attributes (Window ollback. troys later snapshots sts :	ws clients only)	Properties
Treate and restore to a new Destination for virtual hard d tore Options Hestore without access-con Skip verification and force re orce rollback even if it desi a destination file already exist Systemite existing files Restore the file using a temp	v virtual hard disk file disk file: atrol attributes (Window ollback. troys later snapshots sts: porary filename	ws clients only)	Properties
Create and restore to a new Destination for virtual hard d tore Options Skip verification and force re orce rollback even if it desi a destination file already exis Dverwrite existing files Restore the file using a temp Do not restore the file	v virtual hard disk file disk file: atrol attributes (Windor ollback troys later snapshots sts: porary filename	vs clients only]	Properties
Treate and restore to a new Destination for vitual hard d tore Options Testore without access-con skip verification and force re force rollback even if it desi a destination file already exist Dyerwrite existing files Restore the file using a temp Do not restore the file Diverride default job priority	v virtual hard disk file disk file: htrol attributes (Window ollback troys later snapshots sts: porary filename	ws clients only)	Properties

40. Monitor the restore progress from the Activity Monitor in the NetBackup Administration Console.



Setting up the DR Series system cleaner

Performing scheduled disk space reclamation operations are recommended as a method for recovering disk space from system containers in which files were deleted as a result of deduplication.

The cleaner runs during idle time. If your workflow does not have a sufficient amount of idle time on a daily basis, then you should consider scheduling the cleaner to force it to run during a scheduled time.

If necessary, you can perform the procedure shown in the following screenshot to force the cleaner to run. After all of the backup jobs are set up, the DR Series system cleaner can be scheduled. The DR Series system cleaner should run at least 40 hours per week when backups are not taking place, and generally after a backup job has completed.

		KCV6S1			Help Log out
	Dashboard Alerts Events Health Usage	Cleaner Sched	ule entral, Mon Jan 23 15:18:49 2012	Schedule Cleaner	Schedule
	Statistics: Container	Day	Start Time	Stop Time	
	Statistics: Replication	Sun	_	-	
-	Storage	Mon	-	-	
	Containers	Tue	-3	-	
	Replication	Wed			
	Compression	Thu			
	Renlication	Fri			
1	Cleaner	Sat		-	
	System Configuration Networking Active Directory Email Alerts Date & Time Support Diagnostics Software Upgrade	Note: When no schedule	e is set, the cleaner will run as needed	L	



Monitoring deduplication, compression, and performance

6

After backup jobs have run, the DR Series system tracks capacity, storage savings, and throughput on the DR Series system dashboard. This information is valuable in understanding the benefits of the DR Series system.

Note: Deduplication ratios increase over time. It is not uncommon to see a 2-4x reduction (25-50% total savings) on the initial backup. As additional full backup jobs are completed, the ratios will increase. Backup jobs with a 12-week retention will average a 15x ratio, in most cases.





A Creating Symantec NetBackup storage units for CIFS and NFS

A.1 Creating a storage unit for CIFS

There are two options for Symantec NetBackup to authenticate to a DR Series system through CIFS as described below.

- Integrating Symantec NetBackup Server and the DR Series system with Active Directory
 - Ensure the AD user has appropriate ACLs to the DR Series Deduplication Appliance Container share
 - o Set the Symantec NetBackup service to run with this AD user < Domain\User>
- Ensure that the following services are run by a service or domain account that has full access to the DR Series system container share UNC path:
 - o NetBackup Client Service
 - o NetBackup Remote Manager and Monitor Service
 - o NetBackup Service Layer
 - i. To set the password for local CIFS administrator on the DR Series system, log on to the DR using SSH with username: Administrator, password: StOr@ge!
 - ii. Run the following command:

```
authenticate --set --user administrator
```



Note: The CIFS administrator account is a separate account from the administrator account used to administer the appliance. After an authentication method is chosen, set the Symantec NetBackup service account to use the CIFS administrator account.

- iii. Launch the Microsoft Services Snap-in by clicking Start > Run > Services.msc > Enter.
- iv. Locate the services, right-click Properties and click the Log On tab.

🕵 Services					
etBackun Client Service	Name 🔶	Description	Status	Startup Type	Log On As
-	NetBackup Agent Request Server	Populates t	Started	Automatic	Local System
top the service	NetBackup Audit Manager	Manages N	Started	Automatic	Local System
ause the service	NetBackup Authentication	NetBackup		Disabled	Local System
estart the service	NetBackup Authorization	NetBackup		Disabled	Local System
	NetBackup Bare Metal Restore Boot Server	NetBackup		Automatic	Local System
escription:	NetBackup Bare Metal Restore Master Server	Manages r		Automatic	Local System
lient Service	NetBackup BMR MTFTP Service	Provides T		Manual	Local System
	NetBackup BMR PXE Service	Provides P		Manual	Local System
	NetBackup Client Service	Client Service	Started	Automatic	Administra
	WetBackup CloudStore Service Container	Provides c	Started	Automatic	Local System
	NetBackup Compatibility Service	This servic	Started	Automatic	Local System
	NetBackup Database Manager	Manages t	Started	Automatic	Administra
	NetBackup Deduplication Engine	Processes		Disabled	Local System
	NetBackup Deduplication Manager	Manages t		Disabled	Local System
	NetBackup Device Manager	Starts the		Automatic	Local System
	NetBackup Enterprise Media Manager	Keeps trac	Started	Automatic	Local System
	NetBackup Event Manager	Creates an	Started	Automatic	Local System
	NetBackup Indexing Manager	Manages I	Started	Automatic	Local System
	NetBackup Job Manager	Starts jobs	Started	Automatic	Local System
	NetBackup Key Management Service	The NetBa		Automatic	Local System
	NetBackup Legacy Client Service	Listens for	Started	Automatic	Local System
	NetBackup Legacy Network Service	Legacy Net	Started	Automatic	Local System
	NetBackup Policy Execution Manager	Creates an	Started	Automatic	Local System
	NetBackup Proxy Service	Executes t		Manual	Local System
	NetBackup Relational Database Manager	Manages t	Started	Automatic	Local System
	NetBackup Remote Manager and Monitor Service	Enables Ne	Started	Automatic	Administra
	Sea NetBackup Request Daemon	Processes	Started	Automatic	Local System
	NetBackup Resource Broker	Allocates r	Started	Automatic	Local System
	NetBackup SAN Client Fibre Transport Service	Implement		Disabled	Local System
	NetBackup Service Layer	Gateway t	Started	Automatic	Administra
	NetBackup Service Monitor	Monitors th	Started	Automatic	Local System
	🖏 NetBackup Storage Lifecycle Manager	Manages S	Started	Automatic	Local System
	NetBackup Vault Manager	Manages N	Started	Automatic	Local System
	NetBackup Volume Manager	Acts as a p	Started	Automatic	Local System
	A Netlogon	Maintains a	Started	Automatic	Local System
	Network Access Protection Agent	The Netwo		Manual	Network S

NetBackup	Client Service	Properties (IVANW-W2K8-0	1) 🔀
General	Log On Recov	very Dependencies	
Log on a	BS:		
	al System accour Allo <u>w</u> service to in	nt iteract with desktop	
⊙ <u>T</u> his	account	Administrator@testad.ocarina.lo	Browse
Pass	word:	•••••	
<u>C</u> onf	irm password:	•••••	
<u>Help me</u>	configure user a	ccount log on options.	
		OK Cancel	Apply

Note: Do this step only when no backups are currently running, as restarting the services causes backup jobs to fail. Double-click on the services one at a time.

If you are using local synced accounts rather than the AD account, make sure that there is a ".\"in front of the user name. [move this before the step – that's when the user needs this info]

- v. Click **OK**.
- vi. Restart the NetBackup services from the command line to take effect. For example:

<install dir>\Veritas\NetBackup\bin\bpdown -v -f

```
<install dir>\Veritas\NetBackup\bin\bpup -v -f
```

A.2 Creating a storage unit for NFS

For NFS backup using Symantec NetBackup, you need to create a target folder as the NFS share directory. This is the location to which backup objects will be written. (This is not required while adding a CIFS share.)

- 1. Mount the DR Series system NFS share onto the NFS share directory to which backup objects will be written in the Symantec NetBackup environment.
- 2. Verify the NFS share. One way is to use the Linux command "cat /proc/mounts". The rsize and wsize of the connects in the command output should be 512K.

B VTL configuration guidelines

B.1 Managing VTL protocol accounts and credentials

B.1.1 iSCSI Account Details and Management

By default, the iSCSI username is the hostname of the DR Series system and can be confirmed by reviewing the output of the iscsi –account --user CLI command. For example:

>iscsi --show --user user : dr9-interop-a7

The default iSCSI password is St0r@ge!iscsi. You can modify this password in the iSCSI tab of the Clients page. Click Edit CHAP Password and enter a new password as needed.

IMPORTANT NOTE: iSCSI CHAP passwords must be between 12 and 16 characters long

Ľ	CELL DR4000								administrator (Log out) Help
SW	sys-63.ocarina.local 🔹	Clients					Update C	lient Edit Password (Edi	it CHAP Password Delete DR2000v
	Global View Dashboard Alerts	Total Numbe	r of Clien	ts: 1					2
	Events	NFS	CIFS	RDA	NDMP	iscsi	DR2000v		
Usage Number of Current ISC SI Sessions active: 1 -Container Statistics ISCSI Current Sessions Statistics									
	Containers	Test-VTL		ign E	dit CHAP A	ccount			
+++++++++++++++++++++++++++++++++++++++	Replication Encryption Clients Schedules System Configuration	1		w c	IARNING: AI New CHAP F onfirm New F	l existing i Password: [Password: [SC SI sessions	s will be terminated upon s	ubmission. *All fields are required.
+	Support								Cancel Submit

Alternatively, you can also use the iscsi--setpassword CLI command to change the iSCSI CHAP password as shown in the following example:

B.1.2 NDMP account details and management

The default username for the NDMP service is "ndmp_user." This can be confirmed on the NDMP tab of the Clients page in the DR Series system GUI.

interop-a7.ocarina.local 🖂	Client	ts						Update Client	Edit Password	Delete DR
Dashboard Alerts	Total Number of Clients: 0							2		
Events	NFS	CIFS F	DA N	NDMP	iSCSI	DR2000v				
Usage Container Statistics Replication Statistics	Number	of Current ND	MP Sess	ions in a	active: 0					
Storage	ID	Duration	State	Sourc	e	Targe	t	Throughput	Transfer Size	DMA
Containers Replication	NDMP Completed Sessions Statistics									
Clients	ID	Duration	State	Sourc	e	Targe	t	Avg. Throughput	Transfer Size	DMA
Scneaules System Configuration Networking Active Directory	1	Edit Pass	word							3
Local Workgroup Users Email Alerts Admin Contact Info Password	All fields are required. Client Type: NDMP User name: backup_user New password:									
	Confirm password:									

You can also use the CLI command ndmp – show as shown in the following example.

> ndr	npshow	
NDMP	User:	ndmp_user
NDMP	Port:	10000

The default password is St0r@ge! It can be modified by running the ndmp – setpassword command:

```
> ndmp --setpassword
```

NDMP password successfully updated.

B.1.3 VTL default account summary table

Service	Account	Default Credentials	CLI Modifier
NDMP	ndmp_user	St0r@ge!	ndmpsetpassword
iscsi	<appliance hostname=""></appliance>	St0r@ge!iscsi	iscsisetpassword

B.2 Managing VTL media and space use

B.2.1 General performance guidelines for DMA configuration

The DR Series system version 3.2 (and later) provides inline VTL deduplication, compression, and encryption at rest. Backup Applications (such as Dell NetVault, Symantec BackupExec, Symantec NetBackup, etc) should be configured so that any multiplexing, pre-compression, software side deduplication or encryption is disabled. Enabling any of these features may adversely affect the space savings and ingest performance of the DR Series Appliance VTL feature.

Slots and media should be configured so as to accommodate the environment backup requirements. Initially the logical capacity of a VTL should be no more than twice the physical size of the DR Series Appliance. If the initial VTL setup is oversubscribed at a higher than a 2-1 ratio without proper planning the DR Series Appliance could fill up prematurely and cause unexpected system outage. It is highly advisable to configure the DR Series Appliance VTL such that the media count be made to accommodate the customer's initial logical data protection requirements and then media be added as the deduplication statistics become available to ascertain growth, media and space requirements.

Media Type selection will depend on a number of factors including the DMA used, the backup cycles and data sources to name a few. As a general rule using smaller tapes is better than using larger tapes so as to allow for a higher level of control over space usage by backup operations. This also allows for easier handling in the event of a system running out of physical space as well as the normal data cleanup procedures.

Adding media to an existing DR Series Appliance VTL is painless and should be leveraged to incrementally add media as needed. Although this may require a higher level of involvement in managing the media usage it will result in better performance and avoid unplanned outages.

B.2.2 Physical DR space sizing and planning

Various factors such as total data footprint, change rate, backup frequency and data lifecycle policies will dictate how much physical space will be needed to accommodate the Virtual Tape Libraries within a DR environment. In addition if other container types are hosted these two must be factored into space requirement calculations. As a general rule the following can be used as a reference to determine the basic capacity needed for a given virtual tape library container:

- 1. Determine existing data set
- 2. Determine the change rate (Differential)
- 3. Determine the retention period



- 4. Calculate the data footprint during the retention period for existing data sets based on a 10-1 deduplication ratio
- 5. Calculate the data footprint during the retention period for change rate data sets based on a 10-1 deduplication ratio
- 6. Calculate the ratios within the retention period for each of the data sets
- 7. Determine the lowest ratio data set to be retired within the retention period and create media of size that closest matches this data footprint so that when a retention period is met the most amount of media is recycled to invoke data reclamation alignment and optimizing media consumption.

IMPORTANT: If other containers are being configured to host CIFS/ NFS / RDA or OST, these must also be factored into the planning and management of space.

B.2.3 Logical VTL geometry and media sizing

The logical size of the VTL including media size and media count should be made such so as to accommodate the existing data footprint targeted for protection. The calculation for such should include the initial footprint, change rate and retention period. It should also take in account the size of both full and incremental data sets. Using the smallest iteration of the data sets to dictate the logical size of the VTL media affords users the ability to retire media in smaller increments which results in high levels of use and also provides the users the ability to conduct operations across smaller objects which results in higher levels of flexibility such as when a restore is needed during backup operations.

We can review a typical full weekly plus incremental daily example to demonstrate one method of conducting this calculation. In our example the total logical foot print for the customer environment is 20TB and with a 10% change within a weekly recovery point objective period for a complete weeks' worth of protection we calculate that we will require 22TB of total logical media to retain the data footprint for the given environment for one week. In order to allow for disparities we also include a 10% increase to allow for flexibility in the deployment and use of the VTL which results in a 24.2TB total virtual media requirement for a single weekly retention period.

Important Note: Media can always be added as needed. Media cannot, however, be deleted, so care must be taken to avoid creating too many media items.

In the previous example, at the end of the 5-week cycle the 1st week retires and frees up media to be reused or recycled, which once processed will allow the DR Series system to reclaim the physical space associated with the virtual media. Since the smallest data set footprint resulting from the change rate is 2TB in each incremental iteration, we create our media at 800GB increments and add as we grow. For this example, the initial VTL would be created with **152** (*121TB divided by 800GB*) pieces of media at **800GB** for each piece media.

	P	re-Deduplication	
Week	Logical Size	Logical Full Metrics	10% Change Rate Logical Incremental Metrics
1	24.2TB	20TB	2TB
2	24.2TB	20TB	2TB
3	24.2TB	20TB	2TB
4	24.2TB	20TB	2TB
5	24.2TB	20TB	2TB
Total	121TB		

20TB Total initial footprint with a 10% change rate

B.2.4 Media retention and grouping

Due to the nature of VTL, media must be managed to insure that physical capacity is reclaimed in an orderly fashion to avoid running out of space and disrupting operations. Media must be grouped within the data management application, in a way that full data sets are targeted to separate media as incremental data; and, they, in turn, are grouped by data sets that expire within the same period or that share the same recovery point objective. This insures that media can be reused effectively so that when full all incremental data expire the logical space can be reconciled thus enabling the physical space to be reclaimed.

B.2.5 VTL media count guidelines

Туре	Capacity	Max number of Tapes supported
LTO-4	800GiB	2000
LTO-3	400GiB	4000
LTO-2	200GiB	8000
LTO-1	100Gib	10000
LTO-1	50Gib	10000
LTO-1	10GiB	10000

B.2.6 Adding media to a VTL container

To add media to an existing VTL container, navigate to the Containers menu in the DR Series system GUI. Select and edit the target VTL container. In the resulting dialog box, in the **Add More Tape (no of Tape)** field, enter the number of tapes to add to the VTL container.

Global View	Containers				0	eate Edt Delete Displ	ay Statistic
Dashboard -Alerts	Number of Containers: 5					Container Path:	/container
Events	Containers	Fil	es	Marker Type	Access Protocol Ena	bled Replication	Select
Health	backup	0		Auto	NFS, CIFS	Not Configured	0
Container Stat	intvm05_ndmp	3	1.	Unix Dump	VTL NDMP	Not Configured	0
Replication St	intym05iscsi	3	1	Networker	VTL ISCSI	Not Configured	0
Storage	intvm05iscsi2	3	1	Networker	VTL ISCSI	Not Configured	0
Containers	TEST_VTL_LALA	3	1	None	VTL NDMP	Not Configured	•
Schedules System Confl Networking Active Directo Local Workgro Email Alerts Admin Contac Password Email Relay H	s Users Tape nto Access Pr	OEM: • Size: • Size:	80038 10038 NDMP	 400GB 50GB ISCSI 	O 200GB O 10GB O No Access	Container Name and Ty TEST_VTL_LALA VTL	rpe
Date and Time	Access C	ontrol: 10	IDN or IP 8.238.125		4		
-Diagnostics Software Upg	Add More Tape (no. of	tape):					
License	Marker	Туре: О	Unix Dump				
SSI Certificat			None				

Alternatively, you may also use the "vtl -create_carts" CLI command. For example:

```
> vtl --create_carts --name TEST_VTL_LALA --tapes 10
Created 10 cartridges
```

B.2.7 Updating NetBackup to identify newly added VTL media

After VTL media has been added to a target VTL container, NetBackup must be updated to use the newly created media.

1. Select the robot of the VTL and perform an inventory update (as when you added the VTL initially).



2. Select the options, **Update Volume Configuration** and **Preview Changes**, and then click **Start**.

📱 2k8r2intvm01 - Robot Inventory	×
Select robot Device Host: [2k8r2intvm01 Robot: [TLD(0) - 2k8r2intvm01	Inventory operation Show contents Compare contents with volume configuration Update volume configuration Advanced Options Preview changes Empty media access port prior to update
Results	
I	∑ Clear Results Close Help

3. Verify that the media is found, and click **Yes**.

2k8r2intvm25 - Robot Inventory	X
Select robot Device Host: 2k8r2intvm25 Robot: TLD(0) - 2k8r2intvm25	Inventory operation Show contents Compare contents with volume configuration Update volume configuration Advanced Options Preview changes Empty media access port prior to update
Start Stop Results	Ation JC) to robot slot 11. JC) to robot slot 12. DD) to robot slot 13. DE) to robot slot 14. JF) to robot slot 15.
Update volume configuration?	Yes No Clear Results Close Help

4. Verify that the media is added and click **Close**.

2k8r2intvm25 - Robot Inventory	x
Select robot Device Host: [2k8r2intvm25 Robot: TLD(0) - 2k8r2intvm25	Inventory operation Show contents Compare contents with volume configuration Update volume configuration Advanced Options Preview changes Empty media access port prior to update
Start Stop	
Update volume configuration? y Updating volume configuration Processing new media added to the robotic library by adding media with new media IDs as follows Media ID Slot 	logically
Volume configuration successfully updated.	×
I	Clear Results

B.2.8 Space reclamation guidelines

General Guidelines

The DR Series system version 3.2 VTL feature is presented to operating systems and data management applications alike as devices either through iSCSI or NDMP protocol connectivity. The DMA interfaces with the virtual tape library and all its underlying components including the drives and media though these specific protocols.

The DMA must interact with the virtual tape media during a recycle, reuse or media initialization process in order for the DR to be able to reclaim space during its own cleaning cycle.

This two-step process is required so that the backup software can reconcile the space by marking the media as expired then reusing it, consolidating space across volumes/tapes or by simply recycling the media into a scratch pool. Once these operations have been completed the DRs own cleaning cycle should be used to reclaim that virtual tape media space which in turn will free up physical space on the DR unit.

Implementing proper media pool, groups and recycling practices will allow the virtual tape media to be used at optimal levels and that the underlying physical space be reclaimed accordingly by the scheduled DR reclamation.

Note: In general the guidelines provided above should be sufficient for normal operations to insure proper reclamation of space is conducted preemptively. Refer your individual DMA applications for best practices and guidelines regarding tape reuse.

Product Specific Guidelines

In the event that space becomes an issue or a user impact requires manual cleaning, media can either be manually Erased, Blanked, Scratched or otherwise recycled and a manual cleaning cycle initiated on the DR Series system.

For NetBackup the following steps can be used when a situation dictates that space must be reclaimed manually.

 Identify the DR Series system VTL tapes that have been written to via the NetBackup Administrative Console. Note down the Media IDs of the tapes that you want to erase and reclaim their storage on the DR. Be sure to only note the tapes you are assured can be erased.

Important: This will permanently delete / destroy the data on these virtual volumes.

1									
🛅 Media - 2k8r2intvm01 - NetBackup Administration Console									
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2k8r2intvm01	10 Volume(s) i	n Volume Pool Net	Backup						
2k8r2intvm01 (Master Server)	Media ID	Barcode	Media Type	Robot Type	Robot Num Robot Cont	Slot Volume Group Volume Pool	Mounts Time Assigned	Application	Cleanings R
- S Activity Monitor	2 V1R00A	QKBV1R00A	HCART	TLD	0 2k8r2intvm01	10 000_00000 NetBackup	0	- NetBackup	
😑 🗒 NetBackup Management	🖾 V1R009	QKBV1R009	HCART	TLD	0 2k8r2intvm01	9 000_00000 NetBackup	0	- NetBackup	-
E E Reports	🖾 V1R008	QKBV1R008	HCART	TLD	0 2k8r2intvm01	8 000_00000 NetBackup	0	- NetBackup	-
E- 🛄 Policies	🖾 V1R007	QKBV1R007	HCART	TLD	0 2k8r2intvm01	7 000_00000 NetBackup	0	- NetBackup	-
- Summary of all Policies	🖾 V1R006	QKBV1R006	HCART	TLD	0 2k8r2intvm01	6 000_00000 NetBackup	0	- NetBackup	-
- Backups	🖾 V1R005	QKBV1R005	HCART	TLD	0 2k8r2intvm01	5 000_00000 NetBackup	0	- NetBackup	-
Storage	🖾 V1R004	QKBV1R004	HCART	TLD	0 2k8r2intvm01	4 000_00000 NetBackup	0	- NetBackup	
Corage Units	🖾 V1R003	QKBV1R003	HCART	TLD	0 2k8r2intvm01	3 000_00000 NetBackup	1	- NetBackup	
a grad factor and the second s	V1R002	QKBV1R002	HCART	TLD	0 2k8r2intvm01	2 000_00000 NetBackup	1 4/12/2015 3:36:36	PM - NetBackup) .
Storage Lifecycle Policies	🖾 V1R001	QKBV1R001	HCART	TLD	0 2k8r2intvm01	1 000_00000 NetBackup	1	- NetBackup	
SLP Windows									
- 🖉 Catalog									
🗈 📆 Host Properties									
Applications									
😑 🛬 Media and Device Management									
🖻 🔤 Media									
P Volume Pools									
None									

2. Run the following script with the media IDs to enable the tapes to be relabeled and erased.

set label="<media ID>"

"C:\Program Files\Veritas\NetBackup\bin\admincmd\bpmedialist.exe" -m %label%

"C:\Program Files\Veritas\NetBackup\bin\admincmd\bpexpdate.exe" -m %label% -d 0

"C:\Program Files\Veritas\Volmgr\bin\vmquery.exe" -m %label%

3. The tapes may now be re-labeled, which will clear the data from the tapes.

🛅 Media - 2k8r2intym01 - NetBackup Administration Console							
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2k8r2intvm01	10 Volume(s) in	Volume Pool Net	Backup				
2k8r2intvm01 (Master Server)	Media ID	Barcode	Media Type	Robot Type	Robot Num Robot (Iont Slot	
Activity Monitor	🖾 V1ROOA	QKBV1R00A	HCART	TLD	0 2k8r2in	tvm01 10)	
🖹 🛄 NetBackup Management	🖾 V1R009	QKBV1R009	HCART	TLD	0 2k8r2in	tvm01 9	
E Reports	🖾 V1R008	QKBV1R008	HCART	TLD	0 2k8r2in	tvm01 8/	
	🖾 V1R007	QKBV1R007	HCART	TLD	0 2k8r2in	tvm01 7	
Summary of all Policies	🖾 V1R006	QKBV1R006	HCART	TLD	0 2k8r2in	tvm01 6 🔎	
backups	🖾 V1R005	QKBV1R005	HCART	TLD	0 2k8r2in	tvm01 5 🤟	
	🖾 V1R004	QKBV1R004	HCART	TLD	0 2k8r2in	tvm01 4 🥢	
Storage Units	🖾 V1R003	QKBV1R003	HCART	TLD	0 2k8r2in	tvm01 3	
B fas270born	🔍 V1R002			Inc	0 2k8r2in	tvmO1 2 Ob	
	🖾 V1R001	Sie Gewann		1115 E-b-w	0 2k8r2in	tvm01 1 0,	
SLP Windows		•••• <u>C</u> hange		Enter		•	
atalog		☆ Move				2	
Host Properties		🗙 <u>D</u> elete		Del			
Applications		📾 Change Volu	ime Group				
🖻 🖶 Media and Device Management		Change Void					
		Change Med	lia Owner				
🖻 📲 Media		Rescan/Upd	ate Barcodes				
E Volume Pools		📑 Eject Volume	e From Robot			1	
None		😑 La <u>b</u> el				\geq	
NetBackup		Im Long Erase.					
DataStore		📕 Quick Erase.					
		Freeze					
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4. Click **OK** in the Label dialog box.

Label 🗙
Please enter a media server to handle the request. The media server would be a host connected to a drive of the appropriate density.
Media Server:
2k8r2intvm01
✓ Verify media label before performing operation
OK Cancel Help

5. Click **OK** in the warning dialog box.

NetBacku	p Administration Console	×
4	WARNING: This action is irreversible and any data will be permanently lost from this media and no longer available for restore or import. Click OK to continue with this operation.	
	OK Cancel	

6. Click **OK** in this message dialog box.

NetBacku	p Administration Console	×
1	The operation has started. Use Activity Monitor to view progress. If the media server is not in the NetBackup configuration currently being administered, the job may not appear in the Activity Monitor.	
	ОК	

7. Monitor the progress of the media labeling from the Activity Monitor.



- Once the reconciliation process has completed on the NetBackup software, from the DR Series system, initiate a cleaning cycle either via the GUI or via the command line. For example:
 maintenance --filesystem --reclaim_space
 Successfully started cleaner.
- 9. Ensure the space has been reclaimed via the GUI or via the command line. (The **Cleaner Status** should transition from *Running* to *Pending* at which time the statistics should change to reflect the reclaimed space.) For example:

> statssystem	
Capacity Used	: 22.0 GiB
Capacity Used in GB	: 23.666
Capacity Free	: 7970.4 GiB
Capacity Free in GB	: 8558.199
Read Throughput	: 0.00 MiB/s
Write Throughput	: 0.00 MiB/s
Current Files	: 66
Current Bytes	: 33595753405
Post Dedupe Bytes	: 24926224990
Post Compression Bytes	: 22734553886
Post Encryption Bytes	: 0
Post Encryption Bytes in GiB	: 0.0 GiB
Compression Status	: Done