

Setting up Dell[™] DR Series Deduplication Appliance on Dell vRanger Pro

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Revisions

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Executive Summary

This paper provides information about how to set up the Dell DR Series Deduplication Appliance as a backup target for vRanger Pro[®] Backup & Replication software. This paper is a quick reference guide and does not include all DR Series Deduplication Appliance deployment best practices.

See the DR Series Deduplication Appliance documentation other data management application best practices whitepapers for additional information.

NOTE: The DR Series Deduplication Appliance/vRanger build version and screen shots used for this paper may vary slightly, depending on the version of the DR Series Deduplication Appliance/vRanger software version used.

1 Install and Configure the DR Series Deduplication Appliance

- 1. Rack and cable the DR Series Deduplication Appliance, and power it on.
- 2. Please refer to *Dell DR Series System Administrator Guide*, under sections of "iDRAC Connection", "Logging in and Initializing the DR Series System", and "Accessing IDRAC6/Idrac7 Using RACADM" for using iDRAC connection and initializing the appliance.
- 3. Log in to iDRAC using the default address **192.168.0.120**, or the IP that is assigned to the iDRAC interface. Use user name and password of "**root/calvin**".

stem II DR4000 st , Admin	Properties System Sur	Setup Power	r Logs Alerts Console/Media Details System Inventory	vFlash Remote File Share	
stem	System	Summary			■ C ?
RAC Settings Iteries ns	Server	r Health			
wer Supplies	Status	Component		Virtual Console Preview	
movable Flash Media mperatures		Batteries		Options : Settings	
ltages		Pana			
werMonitoring		Induston		and the state of t	
		Power Supplies			
		Removable Flash	Media		
		Temperatures			
		vutages		Rel	Kesh Launch
	Server	Information		Guick Launch Tasks	
	Power:	State	ON	Power Ots / OFF	
	Opstern	n Model	Dell DR4000	Power Cycle System (cold boot)	
	System	Revision	1	Launch Virtual Console	
	Dysterr	h Host Name	DR4000-DKCV6S1.asglab.roundrock	View System Event Log	
	Operati	ing System	CentOS	View IDRAC Log	
	Operati	ing System Version	release 5.4 (Final) Kernel 2.5.18-154.e	Update Firmware	
	Service	Tag	DKCV6S1	RESERVICE	
	Expres	a Denvice Code	29529104401		
	BIOSW	version	1.9.0		
	Firmer	are Version	1.80 (Build 17)		

4. Launch the virtual console.



5. After the virtual console is open, log in to the system as user **administrator** and the 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 A	ddress k
IP Address	: 10.10.86.108
Network Mask	: 255.255.255.128
Default Gateway	: 10.10.86.126
DNS Suffi×	: idmdemo.local
Primary DNS Server	: 10.10.86.101
Secondary DNS Server	: 143.166.216.237
Host Name	: DR4000-5
Are the above settings correct	(yes/no) ? _

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

DEAL DR4000-DKCV	/651	nep
Login		Reset Password
	Please enter your password:	
	Username: administrator	
	Password: St0r@gel	
	Log in	

Note: if you do not want to add DR Series Deduplication Appliance to Active Directory, please see the *DR Series Deduplication Appliance Owner's Manual* for guest login instructions.

- 9. Join the DR into Active Directory domain.
- Select **Active Directory** from the menu panel on the left side of the management interface.



• Enter your Active Directory credentials.

		administrator (Log out) Help
ivanw-sw-02.ocarina.local Global View Global View Alerts	Active Directory	Join
Events Health Usage Container Statistics	Domain Name (FQDN)*:	* = fields are required.
Replication Statistics Storage Containers Replication	Password*: Org Unit:	Enter Active Directory Info
Clients Schedules Replication Schedule Cleaner Schedule	\lwanw-sw-02 ocanna.local\nw-clfs-01\	Cancel Join Domain
Such a Configuration Networking Active Directory Local Workgroup Users Email Alerts Admin Contact Info Password		
Email Relay Host Date and Time Support Diagnostics Software Upgrade License		

10. Create and mount the container. Select **Containers** in the tree on the left side of the dashboard, and then click the **Create** at the top of the page.

ivar	w-sw-02.testad.ocarina.lc 💌	Containers				Crea	tte D dit Delete Dis	play Statistics
1	Dashboard Alerts	Number of Containers: 1					Container Pa	ith: /containers
	Events	Containers	Files	NFS	CIFS	RDA	Replication	Select
	– Health – Usage – Container Statistics	backup	2	1	~		Not Configured	0
-	Replication Statistics Storage							
	Containers Replication							
+	- Clients - Schedules							
+	Clients Schedules System Configuration Networking							
	Clients Schedules System Configuration Networking Active Directory Local Workgroup Users Email Alerts							
	Clients - Schedules - System Configuration Networking - Active Directory - Local Workgroup Users - Email Alerts - Admin Contact Info - Password							
	Clients -Schedules -System Configuration Networking Active Directory Local Workgroup Users Ermail Alerts Admin Contact Info Password Ermail Relay Host Date and Time							
+	Clients - Schedules - System Configuration Networking - Active Directory - Local Workgroup Users - Email Alerts - Admin Contact Info - Password - Email Relay Host - Date and Time - Support - Diagnostics							

11. Enter a **Container Name**, select **Enable CIFS** or **Enable NFS** check box. Symantec NetBackup supports both CIFS and NFS protocols.

	X¢L	DR4100 administrator (Log	out) Help
	w-sw-ol2 Global Alerts Events Health Usage Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Storag Contair Replica Storag Contair Replica Storag Storag Contair Storag Storag Contair Replica Storag Contair Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Replica Storag Contair Contair Storag Contair S	Create New Container: *= required fields Assign a name to the container, select its type, access protocol to use and add clients that need access. *= required fields Connection Type* No Access ® NAS (NFS, CIFS) ® Rapid, ta Access (RDA) (*) NFS NFS VS NFS Use NFS to backup UNIX or LINUX clients. CIFS share path: 1/10.250.224.190/sample Use NFS to backup UNIX or LINUX clients. Enable OFS Client Access: Select CIFS or NFS Client Access: Open Access (all clients have access) Add Add Clients: Enter Backup Server Info NFS Options: no nv insecure no no	statistics intainers ielect
Сору	Date ar Suppor Diagno: Softwar License	Cance Create a New Container Cance Create a N	>

12. Select the preferred client access credentials.

nw-sw-	Create New Container:		
Glob	bal	* = required fields	Statistic
Dasl	Assign a name to the container, select its type, access protocol of t	use and add clients that need access.	and courses
Alert	Container Name : Dumpic	Name the container	A ITERIA
Even	ts Connection Type : V No Access V NAS (NFS, CIFS) V Raph pa	ACCESS (RDA)	select
Healt	NFS access path: 10.250.224.190:/containers/sample	CIFS share path: \\10.250.224.190\sample	0
Cont	BIT Lise NES to backup LINIX & LINILIX clients	Lice CIES to backup MS Windows clients	1
Repli	Brable NFS C L C L C L C L C L C L C L C L C L C	See Cirio to backup into windows cherks. ✓ Enable CIFS	
Stor	Select CIFS or NFS	Client Access:	
Cont	tali 🔲 Open Access (all clients have access)	Open Access (all clients have access)	
Repl	Add client (IP or FQDN Hostname):	Add clients (IP or FQDN Hostname)	
Clien	Add	Add	
Syst	Enter Back	In Server Info	
Netw	ori	Remove	
Activ	eľ	•	
Loca	1 V	· · · · · · · · · · · · · · · · · · ·	
Ema	I A NES Options:		
Admi	rw insecure		
Ema	O ro		
Date	Map root to:		
	-select-		
Supp			
Supp	nos		

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

13. Click Create a New Container. Confirm that the container is added.

Global View Dashboard Alerts	iers			Crea	tte Edit Delete Dis	play Statisti
Events Health Usage	Successfully added container "samp Successfully added NFS connection Successfully added CIFS connection	le". for container "sample n for container "sample	e".			
Container Statistics Replication Statistics Number of C	ontainers: 2				Container Pa	th: /contain
Storage Containers	F/	les NFS	CIFS	RDA	Replication	Select
ontainers backup	2	~	~		Not Configured	0
eplication	0				Not Configured	0
Sahadulas			•		Not Conligured	0
System Coninguration Networking Active Directory Local Workgroup Users Email Alerts Admin Contact Info						
Password Email Relay Host Date and Time						

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

ſ	Déli	DR4100	administrator (Log c	out) Help
	nw-sw-02 Global Dashbc Alerts Events Health	Edit Container: sample Connection Type No Access NAS (NFS, CIFS) Devid Data NFS NFS access path: 10 250 224.190/containers/sample Use NFS to backup UNIX or LINUX clients.	* = required fields CIFS CIFS share path: \\10.250.224.190\sample U.Sc CIFS to backup MS Windows clients.	tatistics ntainers elect
	Contain Replica Storage Contain Replica Clients Schedu System Network Active I Local W Email A Admin (Passwo Email R Date an	Client Access: ② Open Access (all clients have access) NFS Options: ③ rw ③ ro Map root to: root	Client Access:	0
Сору	Suppor Diagnos Software License	l - 2013 Dell Inc. All rights reserved.	Cancel Modify this Container	

15. Click Cancel to exit.

DELL DR4100	administrator (L	og out) Help
Vanw-sw-02 Edit Container: sample Global Dashbc Connection Type [*] : O No Access O NAS (NFS, CIFS) Rapid Da NFS NFS access path: 10.250.224.190/containers/sample Use NFS to backup UNIX or LINUX clients. Vents Original Container	* = required fiel	ds tatistics ntainers elect
Replica Open Access (all clients have access) NFS Options: rw insecure Contair rw insecure ro Map root to: system Network Active E Local W Email A Admin C Passwo Email R 	Open Access (all clients have access)	
Diagnos Software Upgrade License Copyright © 2011 - 2013 Dell Inc. All rights reserved.	Cancel Modify this Contain	ıer

NOTE: For NFS backup using vRanger, a target folder needs to be created under NFS share directory. This is a sub-directory of the DR container NFS Export directory. This is the location to which savepoints will be written. This is not required while adding CIFS share. Mount the NFS share onto any of the NFS clients available in the environment. Create a directory using mkdir command inside the mounted directory.

[root@RHEL60-Base ~]#
[root@RHEL60-Base ~]#
[root@RHEL60-Base ~]#
[root@RHEL60-Base ~]#
[root@RHEL60-Base ~]#
[root@RHEL60-Base ~]# mount -t nfs swsys-63:/containers/backup /mnt/mntpt
[root@RHEL60-Base ~]#
[root@RHEL60-Base ~]# mkdir /mnt/mntpt/bt

2 Set up vRanger

NOTES:

- To maximize the DR Series Deduplication Appliance-vRanger storage capacity savings, it is highly recommend following the exact below setup settings.
- The backup formats differ completely when setup settings are changed. Hence, all savings on vRanger installations that had settings changed in between are null and void.
- For backing up virtual machines, open vRanger Backup & Replication Console. Goto My Inventory -> Virtual -> Add, and add either your Virtual Center or ESX Host.
 While adding Virtual Center provide IP/Hostname, and credentials of accessing the virtual center. While adding ESX Host provide root credentials to access the ESX host.

File Tools Help					
😧 Add 🔻 💽 Remove 🌀 Edit 🎯 Run 🕻	Eailover	🙀 Test Failover	🕒 Enable		
My Inventory				Working Inventory	,
Virtual Physical	Туре	Name	Schedule		Next Run
Conternation of the second sec					
Backup Groups ¥					
My Inventory					
🕑 My Jobs					
My Repositories					

• Adding ESX host

🖲 vRanger Backup & Replication				
File Tools Help				
🕞 Add 🕶 💮 Remove 🌀 Edit 🙈 Run 🤤	Failover	🛱 Test Failover	🕒 Enable	
My Inventory				Working Inventory
Virtual Physical	Туре	Name	Schedule	Next Run
S. B. B. B. E. E.				
There are no inventory items to show in this view.				
				Add Host Credentials
				Host Credentials
				Please provide credentials for the following connection.
				DNS Name or IP
				User Name
				User Password
				Add user if user does not exist?
				Root Password
				Port Number 22
				Connect Cancel
Backup Groups ×				
my inventory				
🕑 My Jobs				
📄 My Repositories				
🗋 My Reports				

• Adding Virtual Center

🕲 vRanger Backup & Replication				
File Tools Help				
🕞 Add 🔹 💽 Remove 🕼 Edit 🙆 Run 🜡	Failover	🙀 Test Failover	🕒 Enable	
My Inventory				Working Inventory
Virtual Physical	Туре	Name	Schedule	Next Run
B B B B B B B B B B B B B B B B B B B			Ac P	d VirtualCenter Credentials VirtualCenter Credentials lease provide credentials for the following connection DNS Name or IP User Name User Password Port Number 443 Connect Cancel
Backup Groups ¥ My Inventory My Jobs My Repositories My Reports				

 For backing up physical machines, go to My Inventory -> Physical -> Add Select 'Install Physical Client on machine?' flag. By default Physical client is installed on the physical machine at 'c:\programs Files\Quest Software\'.

ByRanger Backup & Replication					
File Tools Help					
🕞 Add 🝷 🕞 Remove 🖓 Edit 🖓 Run 🖗	a Failover	1 Test Failover	Enable		
	Sh	<u> </u>	Q.		
My Inventory		1	4	working inventor	/
Virtual Physical	Туре	Name	Schedule		Next Run
R- R. R. R.					
There are no inventory items to show in this					
view.					
		Add Physical Mac	oine Credentials		
		Discolar I adapted			
		Physical Machi	ne creaentiais		
				g connection.	
		DNS Name or IP	<u> </u>		
		User Name			
		User Password			
				Physical Client on machine?	
			Long.		
		Agent Location	%Program	mFiles%\Quest Soft	
		Port Number	51000		
				Council Council	1
				Connect Cancer	
Backup Groups ¥					
🚠 My Inventory					
🕑 My Jobs					
My Repositories					
My Reports					

- 3. Mapping CIFS/NFS share to vRanger. vRanger supports both CIFS and NFS protocols.
- Mapping CIFS share : **My Repository** -> **Add** -> **Windows Share (CIFS)** -> Enter required details and then **OK**.

Catalog Search FLR from Manifest	🔄 File Level Restore 📓 Re	store 🛛 👷 Restore from Virtua	l Manifest 🛛 👳 Restore from Ph	ysical Manifest 🕜 Remove	
y Repositories			Working Repository		
	Date Range Last Month	🔹 Group By 📑 Reposi	cories & Machines 🔹		
Windows Share (CIFS)	Host Name	Туре	Created	 Original Size (MB) 	Data Written (W
SFTP	Add Windows Net	work Share Repository			
HIR HES	Windows Netv		etails		
backup_63	Provide Windows N	Vetwork Share details for the rep	oository.		
🚃 EMC Data Domain Boost (DDB)	Repository Nan	ne sample			
	Description	Folder for CIFS share			
	User Name	Administrator			
	Password	REFERENCE			
	Server	\\swews-63\sample\	Browse		
	5.0				
	Filee Space	I			
	Encrypt all back	kups to this repository			
	Password	Password for the repositor	y		
	Confirm	Confirm the Password			
		Г	OK Cancel		
My Inventory					
My Jobs					
My Repositories					
My Reports					

NOTE : While creating repository (CIFS/NFS), for better savings DO NOT enable encryption.

Mapping NFS export : My Repository -> Add -> NFS -> Enter required Credentials -> OK
 ©Vikarger Backup & Replication

ositories					Working Repos	tory		
	Date Rang	e Last Month	 Group By 	_{Reposito}	ies & Machines	•		
	- Host Nam	e	Ty	e	Created		 Original Size (MB) 	Data Written (
iows share (CIFS)	E Reposit	ory Name : backup_63	(1 item)					
	크 🚰	dd Notwork File Sha	vo Dopositora					
		ud Network The Sha	re keposicor				204,800	36,330
up_63	rt	Network File Shar	e Repositor	y Details			204,800	4,308
(ault SmartDisk (NVSD)	re			he repository		-	204,800	5,032
ata Domair Boost (DDB)	n						204,800	4,504
	re	Repository Nane	backup 6			_	204,800	4,860
	In the second se	Description	Folder for NE	C abovo		_	204,000	37,490
		DNS Name or IP Export Directory Target Directory	swsys-63.oc /containers/ bt	arina.local backup/				
		Encrypt all backups	to this reposito	•				
		Password	assword fo	the repository				
		Confirm	Confirm the F	assword				
	_	Comm	Committee		OK Car	nce		
entory								
tories								

NOTE : In 'Export Directory' just mention export directory and not the whole share path [i.e should not provide IP/hostname of DR Series Deduplication Appliance]. And in 'Target directory' just mention the target directory name which was created under share directory [Mentioned above in chapter 2].

4. Enable Change Tracking (Change Block Tracking) on the VM you want to backup.



- 5. Selecting a Virtual or Physical machine for backup 🗑 vRanger Backup & Replication File Tools Help 🚱 Add 🔻 🚱 Remove 🕼 Edit 🙈 Run 🍇 Failover 🙀 Test Failover 🚱 Enable My Inventory Type Name Schedule Virtual Physical 18 - 18 18 *1*8 **5** - E
 Image: Solution of the second sec B Add Host Credentials Credential Properties S. Remove Credentials Backup W2K8-Base Replicate W2K8-Base 5 🛋 Disable Change Tracking View History 🧟 Refresh Inventory Backup Groups ¥ My Inventory 🕑 My Jobs 🚃 My Repositories 🗈 My Reports
- 6. This opens the **Backup Wizard.** Select **Included Hard Disks** in **Virtual Machine Hard Disk Inclusion**. Then click **Next** to get to **Repository Selection**. Select the repository to which the machine is to be backed up.

📵 vRanger Backup & Replicatio	n			_ 🗆 X
File Tools Help				
🕞 Add 🕶 🕞 Remove 🕼 Edit	🙈 Run 🍰 Failover 🔠 Test Failover (🕤 Enable		
My Inventory	Backup Wizard			1
Virtual Disusiant	Repository Selection		M	
			~	
	Select the repository to use with this jud.		Step 3 of 9	
Anand-VCenter-2	Repositories	Selected Repository		
🚯 🛋 Base-W2K8R2	a- a a	Name	sample	
ró20-system-50-vRange nó20-system-50-vRange	Windows Share (CIFS)	Туре	Windows Share (CIFS)	
🚯 📥 RHEL60-Base	sample	Location	swsys-63/sample/	
SUSE11-Base	FTP	Description	Sample CIFS backup folder	
👘 📥 Test-Win2K8	E ME NFS			
🗊 🛸 W2K8-Base		Euro Canada	2104 CD	
	EMC Data Domain Boost (DDB)	Free space	2104 UB	
		Encrypt all ba	ckups to this repository	
		Password	Password for the repository	
		Confirm	Confirm the Password	
Backup Groups				
💑 My Inventory				
🕑 My Jobs	<u>Ľ</u>	1		
📄 My Repositories			<back next=""> Cancel</back>	
My Reports				1
			G	n 📖 🕑 O 😡 O 🕖 .

7. Select the appropriate Transport type according to the set up. If not sure, select **'Automatic Transport Selection**'

📵 vRanger Backup & Replicatio	n in the second s	_ 🗆 🛛
File Tools Help		
🕞 Add 🕶 😁 Remove 🎲 Edit	🕼 Run 🎄 Failover 🛱 Test Failover 🎧 Enable	
My Inventory	Backup Wizard	
Virtual Physical	Transport Selection	
8. B B B B.	Specify how to determine which transports to use for this job.	
Image: State	Automatic transport selection Wharger will select the transport types based on the current configuration and system state Usation transport selection VRanger will use these settings to determine which transport to use Where do you want this job to be ran? On this VRanger virtual appliance Which transports should this job attempt? Advanced [SAN / HoAdd] F LAN Los Seed on the selections above and the current state of your system, this job will attempt to use the following transports Read not be selections above and the current state of your system, this job will attempt to use the following transports Machine-based HoAdd > Machine-based LAN	
Backup Groups		
ona My Inventory	Dne or more hosts in this job do not have a vRanger virtual appliance Configure Virtual Appliance	
O My Jobs		
My Repositories	< Back Next > Cancel	
My Reports		

8. Select appropriate backup options in Options Selection

• For VM



• For Physical Machine

Back	up Wizard
Opt	tions Selection
Sele	ct the options to apply to this job. Step 4 of 8
	VRanger Dackap & Replication win perform the backup after verifying that space is available at the destination.
	Compress backed up files. Vnanger Backed up files.
•	Prable Active Block Mapping (ABM) vRanger backup or representation will optimize the backup time and size by using Active Block Mapping [™] technology on NTFS disks to backup only blocks that are actively used by the guest OS. Deleted data will not be backed up.
	Enable Cataloging. vRanger Backup & Replication will catalog the files on disk for this backup. Cataloging must be enabled in the Configuration Options.
	Canable VSS application level quiescing Wrom, Backing & Benkingtion will may applications oft's Volume Shadow Copy Services (VSS) to put supported applications into a consistent state during a backup. This ensures that the application and data can be reliably recovered from the backup archive.
	Enable VSS log truncation vRanger Backup & Replication will initiate the truncation of any supported application transaction logs upon a successful backup using Microsoft's Volume Shadow Copy Services (VSS). Log truncation automatically frees space in the logical log for reuse by the transaction log.
	< Back Nevt > Cancel

NOTE:

Always Disable **'Check destination for free space'** as DR Series Deduplication Appliance supports deduplication and so overall space occupied is lesser.

Always enable **ABM** (**Active Block Mapping**) for better overall results from both vRanger and DR. vRanger recommends to Enable '**Guest quiescing'** on VM backups, in case of backing up a database (Eg : Exchange server).

Disable 'compress backed up files' for better savings.

9. Retention Policy Selection: Define the type of backup as Full/Incremental/Differential, set Retention Policy.



- 10. Schedule the backup and then provide mail server details for sending mail.
- 11. Verify backup Summary page. Click Finish.

	Backup 'W2K8-Base'	
Description		
nventory Node	W2K8-Base	
Repositories	sample	
Туре	Windows Share (CIFS)	
Location	\\swsys-63\sample\	
Retention Policy	Retain 7 savepoints	
Space Saving Technology	None (Only full backups will be performed)	
Recurrence Schedule	Scheduled	
Frequency	Occurs every day effective 5/7/2013 at 12:29 AM	
Fransport Selection	Automatic	
)ption Flags	2 options set	
-	Enable Active Block Mapping (ABM).	
	Enable Cataloging.	



3 DR Native Replication Setup & Restore from Target Container

3.1 Build Replication Relationship between DRs

1. Create a source container on source DR

van	-sw-03.ocarina.local	Containers				Crea	ite Edit Delete Dis	play Statistic:
1	Dashboard Alerts	Number of Containers: 10	Number of Containers: 10					
	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
	- Replication - Clients	nybu	7	~	~		Stopped	0
	Schedules	pybu1	7		~		Online	0
	Replication Schedule	nw-cifs-01	21				Not Configured	0
	Cleaner Schedule	ran source	0	-			Not Configured	0
	System Configuration	sample	12		~		Not Configured	0
	Active Directory Local Workgroup Users Email Alerts Admin Contact Info Password Email Relay Host Date and Time Support							

2. Create a target container on target DR

anw-sw-01.testad.oca	Containers				Crea	ite Edit Delete Dis	play Statistics			
Dashboard Alerts	Number of Containers: 10	Number of Containers: 10 Container Path: /containers								
- Events	Containers	Files	NFS	CIFS	RDA	Replication	Select			
Health	backup	0	~	~		Not Configured	0			
	cifs1	11		~		Not Configured	0			
Replication Statist	ics cifs2	0		~		Not Configured	0			
Storage	kknfs	0	~			Not Configured	0			
-Containers	kknfs2	0				Not Configured	0			
Replication	nfc 01	0				Not Configured	0			
Clients	THIS-OT	0				Not Conligured	0			
Replication Sched	nts1	U	~			Not Configured	0			
Cleaner Schedule	nw-cifs-01	9		~		Not Configured	0			
System Configur	ation rep-target	0		~		Not Configured	•			
Networking	sample	7		~		Not Configured	0			
Local Workgroup I Email Alerts Admin Contact Info Password Email Relay Host Date and Time Support	Users o									

3. On source DR, go to **Replication** page, and then click **Create**

an-sw-03.ocarina.local	Replication		Create Edit	Delete Stop Start	Bandwidth Disp	lay Statis
Dashboard Alerts	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	nvbu1	source	10.250.243.18	Online	Default	0
Storage Containers Replication Clients Schedules Replication Schedule						

- Copyright © 2011 2013 Dell Inc. All rights reserved.
- 4. Select the source container as source container, then enter the info of second DR

	administrator (Log out) Help
Step 1: Select a local container Step 3: Select a role Dackup cristi kknfs nw.cris-01 rep-source sample Image: Container Step 2: Select Encryption Step 2: Select Encryption Image: None Image: Container 256 bit	* = required fields Create container on remote system Map to container on remote system Username*: administrator Password*: Peer System*: 10.250.242.133 Remote Container: Retrieve Containers(s)
Password Email Relay Host Date and Time Support Copyright © 2011 - 2013 Dell Inc. All rights reserved.	Cancel Create Replication

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

Create Replication Step 1: Select a local container* backup cifs1 ifs1 kknfs nbu-cifs-01 rep-source sample Step 2: Select Encryption* None 128 bit 256 bit 	itep 3: Select a role * • Source © Target Source	* = required fields Step 4: Remote container settings Create container on remote system Map to container on remote system Username*: administrator Password*: Peer System*: 10.250.242.133 Remote Container: Retrieve Containers(s) backup cifs1 cifs2 kknfs kknfs2 kknfs kknfs2 kknfs kknfs2 smple v
Password Email Relay Host Date and Time Support		Cancel Create Replicatio

6. Click Create Replication

Step 1: Select a local container*	Step 3: Select a role *	Step 4: Remote container s Create container on remo Map to container on remo	* = required fields ote system ote system
nbu-cifs-01 nw-cifs-01 rep-source sample	Source	Username* Password* Peer System*	administrator
Step 2: Select Encryption *		Remote Container.	Redneve Containers(s) backup cifs1 cifs2 kknfs kknfs2 nfs-01 nfs1 rep-target sample
Password Email Relay Host Date and Time			Cancel Create Replicatio

Déi

7. Verify the replication relation between DRs is created.

an-sw-03.ocarina.local	Replication		Create Edit	Delete Stop Start	Bandwidth Disp	ay Statis
Dashboard Alerts	Number of Source Replication	ns: 3				
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	nvbu1	source	10.250.243.18 nvbu1	Online	Default	0
Storage Containers	rep-source	source	10.250.242.133 rep-target	Online	Default	•
Schedules Replication Schedule Cleaner Schedule System Configuration Networking Active Directory Local Workgroup Users Email Alerts Admin Contact Info Password Email Relay Host						

NOTE:

Make sure the replication session has **Peer Status** as **Online**. If restore from replication target is needed,

Make sure the replication is in **INSYNC** state from Replication Statistics menu, and Stop or Delete the replication.

Make sure the replication target has **CIFS/NFS** connection(s) enabled when restoring from it.

3.2 Restore data from target DR

- 8. Add the target DR container into vRanger repository. Follow the same steps as described under **Section 2** in **Step#3**.
- 9. Create a restore job from this target container. Go to **My Repositories**, select the container repository. In the **Working Repository** pane click to select a savepoint to restore. Click the **Restore** icon on the toolbar, or right-click the savepoint and click **Restore**.



10. Monitor the job and verify it completes successfully.

Θ	vRanger Backup & Replication						
File Tools Help							
🕞 Add 🔻 💮 Remove 🌀 Edit 🎑 Run	i 🦣 Failover 🙈 Test Failo	ver 🙆 Cancel 🎯 Enable					
Mv Jobs			Recent Jobs - Successfu	ul Tasks			
E Current Jobs (0, 0)	Date Range Last Day	💌 🍓 Reset Layout					
Running Tasks (0)	Name V Type	Source	Destination	Status	Start Time	End Time	Dura
Queued Tasks (0)	Restore "karen_va' Restor	re cifs1	r620-system-43.ocarina.lo	搫 Co	12/29/2013 5:46:36 PM	12/29/2013 7:01:58 PM	01:15
Successful Tasks (8)	Name / Ty	/pe Source	Destination	Statu	is Start Time	End Time	0
Failed Tasks (3)	karen_va Pe	<tore_cifs1->karen_va</tore_cifs1->	r620-system-43.ocarina.	lo 😝 Su	IC 12/29/2013 5:46:54 PM	λ <u>12/29/2015 7:</u> 01:58 Ρλ	μ Ο
Canceled Tasks (U) Aborted Tasks (0)	Name 🗸 Type	Source	Destination	Status	Start Time	End Time	Dura
Scheduled Jobs (1)	🗐 – Backup 'karen_va' Backu	p 10.250.225.83->karen_va	cifs1	搫 Co	12/29/2013 5:39:37 PM	12/29/2013 5:45:16 PM	00:05
On Demand Jobs (3)	🗄 – Backup 'karen_va' Backu	p 10.250.225.83->karen_va	cifs1	搫 Co	12/29/2013 5:49:17 PM	12/29/2013 7:07:47 PM	01:18
Disabled Jobs (27) Job Search							

4 Set up the DR Series Deduplication Appliance Cleaner

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

If necessary you can do the following procedure as described in the screenshot to force the cleaner to run. Once all the backup jobs are setup the DR Series Deduplication Appliance cleaner can be scheduled. The DR Series Deduplication Appliance cleaner should run at least 6 hours per week when backups are not taking place, generally after a backup job has completed.

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.

	KCV6S1			Help Log out
Dashboard Alerts Events Health Usage	Cleaner Sched	lule entral, Mon Jan 23 15:18:49 2012	Schedule Cleaner	Schedule
Statistics: Container Statistics: Ceplication Storage Containers Replication Compression Schedule Retrivition Cleaner System Configuration Networking Active Directory Email Alerts Date & Time Support Diagnostics Software Upgrade	Day Sun Mon Tue Wed Thu Fri Sat Note: When no schedule	Start Time	Stop Tim	e



Monitoring Dedupe, Compression & Performance

After backup jobs have run the DR Series Deduplication Appliance will track Capacity, Storage Savings and Throughput on the DR Series Deduplication Appliance dashboard. This information is valuable in understanding the benefits the DR Series Deduplication Appliance.

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 complete the ratios will increase. As mentioned before backup jobs with 12 week retention will average a 15x ratio in most cases.



