

# Setting Up the Dell<sup>TM</sup> DR Series System on HP Data Protector<sup>®</sup> 7.0

Dell Engineering April 2015

A Dell Technical White Paper

# Revisions

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# **Executive summary**

This document provides information about how to set up the Dell DR Series system as a backup target for HP Data Protector 7.0.

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 build version and screenshots used in this document may vary slightly, depending on the version of the DR Series system/HP Data Protector software version you are using.





# 1 Installing and configuring the DR Series system

- Rack and cable the DR Series System, and power it on. In the *Dell DR Series System Administrator Guide*, refer to the sections, "iDRAC Connection", "Logging in and Initializing the DR Series System", and "Accessing IDRAC6/Idrac7 Using RACADM" for information about using the iDRAC connection and initializing the appliance.
- 2. Log on 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**".

	TED DELL REMOTE CONTROLLER 6 - ENTERPRIS	SE	Supp	ort   About   Logout
System Dell DR4000 root, Admin	Properties Setup Pow System Summary System	er Logs Alerts Console/Media n Details System Inventory	vFlash Remote File Share	
System IDRAC Settings Batteries Fans Jaturaise	System Summary			• C ?
Power Supplies	Status Component		Virtual Console Preview	
Removable Flash Media Temperatures	Batteries		Options : Settings	
Voltages	Fans Fans			
Power Monitoring				
	Power Supplies			
	Removable Flas	h Media		
	Temperatures		Defeat	
	vonages		Reiresh	Launch
	Server Information		Quick Launch Tasks	
	Power State	ON	Power ON / OFF	
	System Model	Dell DR4000	Power Cycle System (cold boot)	
	System Revision	н	Launch Virtual Console	
	System Host Name	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 Tag	DKCV6S1	Reset IDRAC	
	Express Service Code	29529104401		
	BIOS Version	1.9.0		
	Firmware Version	1.80 (Build 17)		

3. Launch the virtual console.

	TED DELL RI CONTROLLE	EMOTE ER 6 - ENTERPRISE			Support   About	Logout	
System Dell DR4000 root , Admin	Properties System Su	Setup Power	Logs Alerts Console/Media	vFlash Remote File Share		_	
System IDRAC Settings Batteries	System	System Summary					
Fans Intrusion Power Supplies	Serve	er Health		Virtual Console Preview			
Removable Flash Media		Batteries		Options : Settings			
Voltages		Fans					
Power Monitoring		Intrusion		<ul> <li>March 1997 C. March 1997 C. Control of Con</li></ul>	A 4 1914 10		
		Power Supplies					
	Removable Flash	dia					
	Voltages						
				Re	fresh Launch	•	
	Server	r Information		Quick Launch Tasks			
	Power	r State	ON	Power ON / OFF			
	Syster	m Model	Dell DR4000	Power Cycle System (cold boot)			
	Syster	m Revision	н	Launch Virtual Console			
	Syster	m Host Name	DR4000-DKCV6S1.asglab.roundrock	View System Event Log			
	Opera	ting System	CentOS	View iDRAC Log			
	Opera	ting System Version	release 5.4 (Final) Kernel 2.6.18-164.e	Update Firmware			
	Servic	е Тад	DKCV6S1	ResetiDRAC			
	Expres	ss Service Code	29529104401				
	BIOS	Version	1.9.0				
	Firmw	are Version	1.80 (Build 17)				

4. When the virtual console is open, log on to the system as the user **administrator** with the password **St0r@ge!** (The "0" in the password is the numeral zero).





5. Set the user-defined networking preferences.



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

Set Static IP A	ddress	▶
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) ? _	

7. Log on to DR Series System administrator console using the IP address with the username **administrator** and password **St0r@ge!** (The "0" in the password is the numeral zero.).

- ○ · · · · · · · · · · · · · · · · · ·	Enter User Defined IP Address	ා ස බ සි සි
	\$1	Help
Login		Reset Password
	Please enter your password:	
	Username: administrator Password: St0r@get Log in	

8. 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 the left navigation area of the DR Series system GUI.

- Copyright © 2011 2013 Dell Inc. All rights reserved.
- b. Enter your Active Directory credentials.

	CLL DR4100 edwinz-sw	-01 Help   Log out
	Minz-sw-01.ocarina.local	Active Directory Join
-	-Dashboard -Alerts	Settings
	Events	The Active Directory settings have not been configured. Click on the 'Join' link to configure them
	Health	[]
	-Osage Statistics: Container	
	Statistics: Replication	Active Directory Comparation
	Storage	= fields are required.
	Renication	Domain Hame (FGDV) -
	Compression Level	Usemame:
	Clients	Enter Active Directory Info
	Schedules	Org Unit
	Cleaner Schedule	(Farcel Tele Bernste)
	System Configuration	Cancel Join Domain
	Networking	
	-Active Directory	
	Email Alerts	
	Admin Contact Info	
	Password	
	-Email Relay Host Date and Time	
	Support	
	Diagnostics	
	Software Upgrade	
	Ucense	
Con	right © 2011 - 2013 Dell loc. /	L diriphis reserved
COD	ing a second considering of	angene received.

9. You now need to create and mount the container. Select **Containers** in the left navigation area, and then click **Create** at the top of the page.

Ŀ	CALL DR4100 edwinz-sw	-01					Не	lp   Log out
ed	winz-sw-01.ocarina.local 👻	Containers			•	Creat	e   Ec   Delete   Disj	play Statistics
	Dashboard Alerts	Number of Containers: 1					Container Pat	h: /containers
	Events	Containers	Files	NFS	CIFS	RDA	Replication	Select
	Health	backup	1	~	~		Not Configured	0
	Usage	·						
	-Statistics: Container							
-	Storage							
	Containers							
	Replication							
	-Compression Level							
	Clients							
_	Schedules							
	-Replication Schedule							
	System Configuration							
	-Networking							
	Active Directory							
	-Local Workgroup Users							
	-Email Alerts							
	-Admin Contact Info							
	Password							
	Date and Time							
	-Diagnostics							
	-Software Upgrade							
	License							
Con	vright @ 2011 - 2013 Dell Inc. A	Il rights reserved						

10. Enter a **Container** Name and click **Next**.

ľ	XELL	DR4000	administra	tor (Log	out)   Help
SW	sys-33.testar Global Vie	Container Wizard - Create N	ew Container	Disp	
I E I	Dashboar	Container Name	* = required fields		
[-	Alerts		Max 32 characters, including only letters, numbers, hyphen, and underscore. Name must start with a letter.	r Path	: /containers
	Health	Container Name":	sample		301001
	Usage			eα	
	Container	Virtual Tape Library (VTL) :			
	Replication				
	Storage				
	Container				
	Replication				
	Encryption				
	Clients				
<b>H</b> -	Schedules				
	System C				
	Networking				
	Active Dire				
	-Local Worl				
	Email Aler		Cancel Next >		
	Admin Cor		· · · · · · · · · · · · · · · · · · ·		
	Password				
	Dete and T	y Host			
l	Support	line			
	Diagnostics				
	Software L	norade			
	license	pgrado			
	SSL Certific	cate			
Copy	right @ 2011 -	2015 Dell Inc. All rights reserved			

11. Select NAS (NFS, CIFS) and click Next. (HP Data Protector supports both CIFS and NFS protocols.)

DØ	DR4000				ator (Log out)   Help	
swsys-33	testar Container Wizard - Create	New Container	_		Display Statistics	
Global Global	boar Select Access Protocols			* = required fields		
Alcta Even Heat Control Repl Store Repl Control Even Store Store Active Active	Storage Access Protocol*: h  a  b  b  c  c  c  c  c  c  c  c  c  c  c	Dell Rapid Data Storage (RDS)     Symantic: OpenStorage (OST)     NAS (NFS, OFS)	0	Container Name and Type sample	v Patr. kontaines	
Local	l Aler		<	Back Cancel Next >	į l	
Adm Pass Emai Date Supp Diag	n Content Relay Host and Time sort nostics ane Upgrade					
	50					



- DR4000 swsys-33: Conta × 💮 DR4000 ← → C State://10.250.241.80/container\_wizard.cgi ☆ = DELL DR4000 -1 ontainer Wizard - Create New Conta Dasht Alerts Events Configure NAS Access Enable Access Protocols : 🖉 NFS (Use NFS to backup UNIX or LINUX clients) Container Name and Type sample CIFS (Use CIFS to backup MS Windows clients) Access Protocols NAS (NFS, CIFS) Marker Type\*: O None ? Auto Networke Unix Dump BridgeHead Time Navigator < Back Cancel Next >
- 12. Select the NFS/CIFS protocol(s) as appropriate and click Next.

13. For NFS, set the client access credentials and click Next.

	C	Xell	DR4000						itor (Log out)   Help
ſ	sws	sys-33.testar Global Vie-	Container Wizard - Create New	Container					Display Statistics
		Dashboar	Configure NFS Access					* = required fields	
ľ		Alerts Events Health	NFS Options *:	<ul> <li>Read Write Access</li> <li>Read Only Access</li> </ul>		Insecure	Container Name an sample	d Type	r Path: /containers
l		Usage Container Replicatior	Map root to :	-select-			Access Protocols NAS (NFS, CIFS) Auto		0
ľ		Storage Container	Client Access :	<ul> <li>Open (allow all clients)</li> <li>Create Client Access List</li> </ul>					
		Fncrvption	Client FQDN or IP :			Add			
ι.		Clients	allow access client(s)			Remove			
L I	+	Schedules							
LP.		System C							
ι.		Networking			w				
ι.		Active Dire							
		Email Aler				< Ba	ck Cancel	Nexts	
11		Admin Cor					cuncer	Next >	
		Password							
ι.		Email Relay	y Host						
L.	-	Date and Ti	ime						
Ľ		Diagnostics	5						
		Software U	pgrade						
I.		License							
l		SSL Certific	cate						

14. For CIFS, set the client access credentials and click Next.

Ľ	X#LL	DR4000		administra	tor (Lo <u>c</u>	out)   Help
SW	sys-33.testar	Container Wizard - Create New	Container		Disp	
	Dashboan	- Configure CIFS Client Access -		* = required fields		
1	Alerts	Client Access :	Open (allow all clients)	Container Name and Type	er Path	: /containers
	Events Health Usage Container Replication Storage Container Replication Encryption Clients Schedules System C	Client FQDN or IP : allow access client(s)	Create Client Access List     Add     Remove     v	sample Access Protocols NAS (NFS, CIFS) Auto NFS Access Read Write Access insecure Open (allow all clients)	be	Select
	Networking Active Dire Local Worl Email Aler Admin Cor Password Email Rela Date and Tr <b>Support</b> Diagnostics Software U License SSL Certific	y Host ime s pgrade :ate	< Bac	k Cancel Next >		

**Note**: For improved security, Dell recommends adding IP addresses for the following (Not all environments will have all components):

Backup console (HP Data Protector Server, HP Data Protector Clients)

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

Global View Dashboard Alerts	Containers						
Alerts					Creat	te   Edit   Delete   Dis	play Statistics
Events Health Usage Container Statistics	Message  Successfully added  Successfully added  Successfully added	Container "sample". NFS connection for cont CIFS connection for cont	ainer "sample tainer "sample				
Replication Statistics	Number of Containers: 2					Container Pat	h: /containers
Containers	Containers	Files	NFS	CIFS	RDA	Replication	Select
Replication	backup	0	~	~		Not Configured	0
Clients	sample	0	~	~		Not Configured	$\odot$
Schedules Replication Schedule Cleaner Schedule System Configuration Support							

16. Select the Container and click **Edit**. Reconfigure client access permissions if required and click **Next**.

ľ	Xell	DR4000	administra	tor (Log out)   Help
SW	sys-33.testar	Edit Container: backup		Display Statistics
	Dashboar	Configure CIFS Client Access	* = required fields	
Γ	Alerts	Client Access :	Open (allow all clients)     Container Name and Type     backup	r Path: /containers
	Health Usage		Create Client Access List     Access Protocols	
	Container	Client FQDN or IP :	10.250.241.5 Add NAS (NFS, CIFS)	0
_	Replication	allow access client(s)	A Remove	0
	Storage			id O
-	Replication		<b>v</b>	0
	Encryption			ed O
	Clients			
	Schedules			
	Networking			
	Active Dire			
	Local Worl			
	Email Aler		< Back Cancel Next >	
	Password			
	Email Rela	y Host		
	Date and T	īme		
	Support			
	Diagnostics Software LL	S parado		
	License	pyraue		
	SSL Certific	cate		
Copy	right © 2011 -	2015 Dell Inc. All rights reserved.		

17. Click **Modify this container** to save any changes or click **Cancel** to exit.

ľ	XELL	DR4000	administra	tor (Log out)   Help
sw	sys-33.testar Global Vie Dashboar	Edit Container: backup	* = required fields	Display Statistics
	Alerts Events Health Usage Container Replication Storage Container Replication Encryption Clients Schedules System C	Container Name and Type Container Name: backup Access Protocols Access Protocol: NAS (NFS, CIFS) Marker Type: Auto	CIFS Access Create Client Access List. 10.250.241.5	r Path: /containers
	Networking Active Dire Local Worl Email Aler Admin Cor Password Email Relay Date and Tr Support Diagnostics Software Up License SSL Certific	y Host ime pgrade ;ate	< Back Cancel Modify this Container	



# 2 Setting up HP Data Protector

# 2.1 Backing up in the Windows environment

1. Open **HP Data Protector Manager**. Click **Configure New Devices**, which opens the **Devices & Media** menu.

🔁 Backup - HP Data Protector Manager	×
Elle Edit View Actions Help	
Backup 🔄 🖳 🗢 📾 🗯 🗰 😭 🖉 🕅 🖉 🖉	
Name Description	
Backup Specifications     Backup Specifications Used for creation and modification of backup specifications.	
B I I I I I I I I I I I I I I I I I I I	
Next Step Wizard	
r Next step	
Add New Lients	
828	
Configuring New Backup Specifications	
→ 🛃 Run an Interactive <u>B</u> ackup	
Eestore from a Backup	
Do not show this window in the future Close	
Re Objects Tasks H 4 b M Backup	_

 Right-click Devices and choose Add Device. In the next window, specify the Device Name and Description that identifies the File Library Device. Select File Library for the Device Type, and enter the information for the Client. Click Next.



💼 Add Device - HP Data Protector Manager		
Devices & Media	🚘 🖃 🛗   ?   ] 😅 🖙	<b>* `\$</b>   <b>\$</b> 27 \$\$ 0
Environment     Automated Operations     F	Specify the device a description.	name, the client system where the device is connected, and the device type. Optionally, add
Devices     Devices by host     Devices conv	Device Name	sample
⊞-@ Media	Description	DR4×00
	Device <u>Type</u>	File Library
	Interface Type	
	Client	edwinz-w2k8-01
	NDMP Server	
	Management Console URL	
	MultiPath device	
	Estimated library capa	ased licensing (Advanced backup to disk)
	Licensing details	
No. Objects		< Back Next > Finish Cancel
- The object of		Ga edwinz-w2k8-01

**Note:** The Windows service account for HP Data Protector requires appropriate permissions to the DR container share for the step below to complete successfully. See **Appendix A** for information about setting up the HP Data Protector service account correctly. This should be done before the next step.

3. The next window asks for the path to the library that is the UNC path to the DR container share. Specify a list of directories for the library. You can also specify the number of writers for the library; it defaults to 1. Click **Properties** to assign proper values to the file library parameters, including **Maximal File Depot Size**. Click **Next**.

💼 Add Device - HP Data Protector Manager		
File Edit View Actions Help		
Devices & Media 💽 🖳 🤐 😵 🕅	➡ E E E <b>?  ]                                  </b>	
Environment     Environme	Specify a list of directories for the library.	<b>-</b>
Devices by host		Add
Extended Copy	\\10.250.242.167\sample	Browse
		Properties
		Delete
	Number of writers:	
		<u> </u>
R Objects	< Back Next>	Finish Cancel
- The opicies		edwinz-w2k8-01 //.



4. The Media Type default is File. Click Next.

add Device - HP Data Protector Manager		×
File Edit View Actions Help		
Devices & Media 💌 🛛 🕮 🖉	➡ = 1 1 1 <b>?                               </b>	
Environment     Evironment     Evironment     Evironde Operations     Evironde Colors     Evironde Copy     Evironde Copy     Media	Specify the type of media used in the library.  Media Type  Standard type of media used by the physical device.  File  Distributed file media format  Using distributed file media format enables the file library for virtual full backup.  Use distributed file media format  Kether Standard	
🙀 Objects	Add Device	
·		

5. Click **Next**. The **Summary** window shows the total physical storage size of that particular File Library Device on the DR container.

🔒 Add Device - HP Data Protector Manager	
File Edit View Actions Help	
Devices & Media 💽 🔛 🧐 📰 🛛	→ □ □   ?  ] → → ● ``,   _ 2 → 5 · "
Devices & Media	Summary Sum
	< Back Next > Finish Cancel
Contracts	H 4 Þ H Add Device -
	File edwinz-w2k8-01

6. Click Finish. In the next window, click Close to close it.

# 2.2 Backing up in the Unix/Linux Environment

The procedure for the Unix/Linux environment is similar to the procedure for the Windows environment described in the previous section. One difference is that in **Step#3**, you need to enter the UNIX path of the DR container export instead of a UNC path, as described below.

For other details, please refer to the procedure for backing up Windows Environment.

**NOTE:** Before proceeding with this procedure, make sure that you can mount/verify the NFS share from the UNIX/Linux client system. Please see **Appendix B** for how to mount/verify the NFS share.

â¤.	Properties for nfs - HP Data Protector Manager	_ = ×
File Edit View Actions Help		
P → Environment Automated Operations P → → → Device Policies P → → → ← Devices	General Repository Settings Summary Specify a list of directories for the library.	
		A <u>d</u> d
• 0 NFS_Saving_233.67	/mnt	Br <u>o</u> wse
← Ū saving _167 ← 🗑 Devices by host		Properties
<ul> <li></li></ul>		Dejete
	Number of writers	ncel Apply
🕼 Objects	Properties for nfs	



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

- In the HP Data Protector Manager, in the Context List drop-down menu, click Backup. In the Scoping Pane, expand Backup and then click Backup Specifications. In the expanded sub-tree view, right-click the Filesystem item and select Add Backup.
- 2. Select the Blank File system Backup template and click OK.

ge Backup Specifications - HP Data Protector Manager	1 ×
File Edit View Actions Help	
Backup Name	
Backup Specifications     Insystem     Transport	
Construction of the second secon	
Settings.	
Fileswitern ) P. [121]	
Reine Stranger Backup Default Apply options	
Deally_intensive Default     Destination     Default     Destination	
Eng_user_arcrive Default     Default     Default     Default	
T_INIM_template Default     Provide the template Default     The template Default     The template Default     The template Default	
One_INTM_template Default     Default     Default     Default     Default	
Weekly_Full_Catalog Default	
Weeky Full Cog Life Default	
I Schedute	
Backup options	
V Load balanced	
Sub tupe	
OK Cancel Help	
Mill Objecto Tasks	
Backup Specifications	

3. Check any source data set that needs to be backed up. In this example, it's the whole local "C:\" drive. Then click **Next**.



Backup - New1 - HP Data Protector Manager		_ D ×
Backup		
	Select the items that you want to back up.	up
	Internal Database	Map Network Share
	E	Disconnect Share
	CONFIGURATION:      CONFIGURATION:     CONFIGURATION:     CONFIGURATION:     CONFIGURATION:     CONFIGURATION:     CONFIGURATION:     CONFIGURATION:     CONFIGURATION:     CONFIGURATION:     CONFIGURATION:     CONFIGURATION:     CONFIGURATION:     CONFIGURATION:     CONFIGURATION:     CONFIGURATION:     CONFIGU	Se6f6
		<u>×</u>
I III Tasks		Next > Finish Cancel
		R edwinz-w2k8-01

4. Select the devices or drives to be used as the backup target. In this example, it's the DR container share/export created in previous section. Check the **Properties** and define other parameters as needed, and then click **Next**.

Backup - New2 - HP Data Protector Manager		
File Edit View Actions Help		
Backup Specifications	Select the devices or drives to be used for the backup.	
	Backup	Add Mirror
	⊂ Show selected	Remove Mirror
	Image: Constraint of the state of	Move Mirror < Move Mirror >
	B - ⊡ () saving_67	
御 Durum (河 Tarka)	< Back Next >	Finish Cancel
	M 4 ▷ M Backup · New2 - M	edwinz-w2k8-01

5. Check and verify the **Backup Specification Options** using the **Advanced** button. Then, in the **Filesystem Options** section, click **Advanced**.



Backup - New2 - HP Data Protector Manager		
Eile Edit View Actions Help		
Backup 💌 🔜 📾	🕶 🖻 🕋 🥐 🖪 🐼 🗢 💭 🐼	
Backup Backup Specifications	Select the backup options for all objects in this backup specification.	
	Backup Specification Options	
	Adjust general backup specification options.	
	Description Advanced	
	Filesystem Options	
	Select the default protection period for all backed up files and directories.	
	Protection: Permanent Advanced	
		-
	Select the default protection period for all backed up disk images.	
	Protection: Remanant X Advanced	1
		-
	Backup to Disk Device Options	
	Source-side dedupiication	
	< <u>Back</u> <u>Next</u> > Finish <u>Cancel</u>	
Basks	N 4 D M Backup New2 -	

6. In **Filesystem Options**, click the **Other** tab. Make sure **Software compression** is not selected, and that **Data security** is set to **None**.

💼 Backup - backup_sample - HP Data Protector Manager	_ 🗆 ×
File Edit View Actions Help	
Backup 🔽 🔡 🗞 🖆 🖛 🖻 😭 😼 🖓 🖑 💭 🕫	
Backup	
E Backup Specifications Filesystem Options	
Filesystem	
backup_cfs1     backup_cfs2     backup_sample     Comparison     Modify the object's advanced options.	
Saving_67     Enhanced incremental backup	
Templates     Tose native Filesyster Change Log Provider if available	Advanced
C Software compression	
Display statistical info	
Lock files during backup	rs.
Backup POSIX hard links as files	Advanced
Do not preserve access time attributes	
Copy full DH image to disk	
Data security	
Logging	Advanced
J.log All	
Backup files of size	
All sizes 💌	
User derined variables	
Eat	
	1
OK Cancel Help	
	Cancel Apply
🙀 Objects 📲 Tasks 🛛 🛛 🗛 👘 Saving_67 🛏 backup_sample 🛏 saving_67 🖛 saving_67	wing_67 w Backup - backup_sample
	Gedwinz-w2k8-01

**Note:** Always disable **Software compression**, as the DR Series system has compression built-in and does not require additional compression on HP Data Protector. In general, additional data compression on backup software will have a negative impact on the total savings of the DR Series system.

Also, setting **Data security** to **None** is recommended, as enabling encryption before the data stream is sent



to the DR Series system device prevents the data from being able to be deduplicated, which would have a significant negative impact on total savings of the DR Series system.

7. Define Backup Job Schedule options and click **Next**.

ackup 🗾 📋 🔛 🕺 📾			?   🗉								
Backup ⊟-∰ Backup Specifications ⊕ ⊕ ☐ Filesystem ⊕ ∰ Templates		Sr no	becify the ot want sc	dates and heduled ba	times that ; ckups to n	you want t un on holid	oackups p days.	erformed. C	Theck the Holida	y box to indica	ate that you do
								•		Undo	
				;	2013 Ju	L				Reset	
										Predefined	
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Holidays		
		1	2	з	4	5	6	7	Disable sch	edule	
		8	9	10	11	12	13	14	_ Legend		
		15	16	17	18	19	20	21	Full		
		22	23	24	25	26	27	28		ntal	
		29	30	31	20	20	2.		Holidays		
		Friday, Jul	y 05, 201:	3							
		Time	Туре	Options			Add Delete				
	11-										

8. Review the Backup Job Summary. Click **Next**.

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File Edit View Actions Help		
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	Client Source Type Description Device	Manual add
	Maledwinz-w2k8-01 C: Filesystem [Windows] C: [Load Ba	Delete
		Change device
		Change Mirror
	_	Properties
	×	_
	< Back Next >	Finish Cancel
🔛 Objects 🖂 Tasks	H 4 D Backup New2 -	

9. Specify a name for the Backup Job. Click **Save As** to save the newly configured backup specification.



💼 Backup - New2 - HP Data Protect	or Manager
File Edit View Actions Help	
Backup Backup Backup Specifications Backup Specifications	Perform finishing steps in your backup/template design.
I I I I I I I I I I I I I I I I I I I	Save as Save the newly created backup/template.
	Start Interactive Backup
	Type the name and select a group, where you want to save your new backup specification.
	pe Single Mailbox, Sybase, Informix, IBM DB2,     Preview is not supported for ZDB and direct
	OK Cancel Help
	Kext Seck Next Sector Cancel
🙀 Objects 📲 Tasks	H 4 ▶ H Backup - New2 =##

10. (This step is **Optional**, or it can be completed when the scheduled backup completes.) Click **Start Backup** to run the backup. When the **Start Backup** window opens, click **OK** to start the backup.

Be backup - backup_sample - The baca Proceccor Mar		
File Edit View Actions Help		
Backup 💽 🔛		
Backup	Source Destination Options Schedule Backup Object Summary	
C-10 Backup Specifications     D-P Filesystem     D backup-cifs1     D backup_cifs2	Select the items that you want to back up.	
B saving_67	Show: Selected Filesystem Backup	•
	E-√2 g≞ edwinz-w2k8-01	Map Network Share
		Disconnect Share
Start Bad		Add/Remove
→■	select the backup type and the desired network load, then click UK to start the backup.	
Backu	b type	
Networ	k load High	
0	K Cancel Help	
i ali i all'I Talla		Cancel Apply
	H 4 D H Backup-backup_sample	

The **Backup** window displays the progress of the backup session. The Session Information window will tell you when the backup is completed.



# 4 Setting up DR-native replication and restore from a target container

### 4.1 Building the replication relationship between DR Series systems

This procedure assumes that on both the source and target DR Series system, a container has already been created for each of them. In this example, this container is called "backup". Also, the target container should not be used for anything else and should be empty, with the same **Connection Type** as the source container.

1. On the source DR Series system, select **Replication** in the left navigation area, and then click **Create**.

l						root (Log	out)   Help
ed	winz-sw-01.ocarina.local 💌	Replication		Create   Edit	Delete   Stop   Start	Bandwidth   Displ	ay Statistics
-	Dashboard Alerts	Number of Source Replication	ns: 0				
	Events	Local Container Name	Role	Remote Container Name	Peer State	Bandwidth	Select
	Health						
	Container Statistics						
	Replication Statistics						
-	Storage Containers						
ζ	Replication						
	Clients						
+ -	Schedules						
+	System Configuration Support						
Сор	yright© 2011 - 2013 Dell Inc. A	Il rights reserved.					

- 2. In the Create Replication dialog box, select a local container as the source container.
- 3. Select a Container on the Remote system.

**Note**: Enter credentials to authenticate to the target DR Series system (default is "Administrator/St0r@ge!), and then click **Retrieve Containers** and select the target container in the list.

4. Click Create Replication.

			* = required fi		
ource container	Replica Container		Cascaded Replica Container (Optional)		
Select container from local system	Select container from	local system	Select container from local system		
backup 🔻	- Select a Container	- •	- Select a Container - 🔹 🔻		
Select container from remote system	Select container from	remote system       Select container from remote system			
Username*:	(?) Username*: admin	nistrator (?)	Username*:		
Password*:	Password*:	•	Password*:		
Remote System*:	? Remote System*: 10.25	0.212.65	Remote System*:		
Retrieve Remote Containe	r(s)	Retrieve Remote Container(s)	Retrieve Remote Container		
- N/A -	backup	•	- N/A -		
ource Container ⇒ Replica Container		Replica	a Container		
ource Container → Replica Container incryption:  None 128 bit 256 bit landwidth Speed Rate: Default (not limited) Kbps Mbps Gbps		Replica ⇒ Cascaded Replic         Encryption: <ul> <li>None</li> <li>Bandwidth Speed Rate:</li> <li> <ul> <li>Default (not limited)</li> <li>Kbps</li> <li>Mbps</li> <li>Mbps</li> </ul></li></ul>	a Container 128 bit  256 bit Gbps		
ource Container → Replica Container Encryption:  None 128 bit 256 bit landwidth Speed Rate: Default (not limited) Kbps Mbps Gbps		Replica ⇒ Cascaded Replic         Encryption:       ● None         Bandwidth Speed Rate:         ● Default (not limited)         ● Kbps       ● Mbps	a Container ) 128 bit  256 bit Gbps Cancel Create Replica		

- 5. Verify that the replication session is created which will display the **Peer State** as **Online**.
- 6. Monitor the replication progress under **Replication Statistics**, and make sure the replication **Status** is **INSYNC.**

vsys-33.testad.ocarina.l Global View	Replication			Create	Edit   Delete   Stop   Start   Disp	olay Statisti
Dashboard Alerts	Number of Replications: 2		Poor State Online			
Events	Source Container	Status	Enable - Yes	Status	Cascaded Replica Container	Selec
Usage	swsys-33 sample1	<u> </u>	Encryption - Not Enabled Bandwidth - default	$\bigotimes$	Not Configured	0
Replication Statistics	swsys-33 backup		swsys-63 backup	Ø	Not Configured	0
Encryption Clients Schedules System Configurati Networking Active Directory Local Workgroup Us Email Alerts Admin Contact Info Password Email Relay Host Date and Time	on ers					
Support Diagnostics Software Upgrade License SSI Contificate						

# 4.2 Running a backup for the source DR Series system



This procedure is optional, that is, it is only for when there is no backup data on the source DR container.

1. Add both a source DR Series system and target DR Series system as devices on HP Data Protector. Then, create a New Backup Job with the source DR Series system as the target.

File Edit View Actions Help	0					
Backup	💽 🛛 🕮 🛇 🖿 🗖	m 🕅 🛛 🦿	] 🖪 🖼   🖑 💭 🕿	J		
Backup     Backup Specifications     Fileswtem     Backup Source		Source	Destination Options	Schedule   Backup () you want to back up.	lbject Summary	
	Start Backyp Previe <u>w</u> Backup		Selected	•	Filesystem Backup	<b>•</b>
⊞ 📺 Templates	Select the Location for th	e <u>S</u> hortcut	글르 edwinz-w2k8-01			Map Network Share
	Apply <u>T</u> emplate					Disconnect Share
	⊆opy As…					Add/Remove
-	Delete	Num Del	-			
						Cancel Apply
🖓 Objects 🎫 Tasks		4 Þ ÞI	Backup - saving_67	-> 🔊 saving_67	->> @ saving_167_	0 <b>-⊨</b>  Ø saving_167_0 -⊨ Ø

2. In the **Start Backup** window, click **OK** to start the backup using the appropriate settings. Monitor job status.

📴 Backup_Source - HP Data Protector Manager	×
Eile Edit View Actions Help	
Backup 🔄    🔮 🙁 🖃 🖃	
문- 🚰 Backup 다 (國) Backup Specifications	Backup
□     □     ■     Backup_Source       □     ■     Backup_Source       □     ■     Backup_Source       □     ■     ■     Backup_Source	Status         Type         Client System         Source         Device         Size         Done         Errors         Warnings         Descrip           Status         WinF5         edwinz-w2k8-01         E:         saving_167         9321 KB         10         0         0         E:         [Date
⊕ [m] Templates	
	Status Device Client System Total Data Medium Label
	Disk Agents Total 1
	Completed Media Agents 1 Failed Media Agents 0 Aborted Media Agents 0
	Media Agents Total 1
	Overall Deduplication Ratio
	Moytes Total
	Disk Agent Errors Total 0
	Session completed successfully!
🙀 Objects 📲 Tasks	H 4 🕨 🛛 🎯 saving_167_0 🛏 🚳 saving_167_0 🖛 🚳 saving_167_0 🖛 🚳 Backup_Source 🖛

3. When the backup job is completed, HP Data Protector creates backup files using the suffix '.fd' on the source DR, and the '.fd' files will be replicated to the target DR Series system.

#### Source DR

🌉 backup						_	
😋 🕞 🖓 🔹 Netw	ork 👻	10.250.242.167 - backup	▼ 5	Search backup			2
Organize 🔻 New fold	er				:==	-	0
🧮 Desktop		Name	Date modified +	Туре	Size		
[ Downloads ا Recent Places		036967d4551e116b15070450058.fd	12/25/2013 7:06 PM	FD File		9,544 KB	
🖃 詞 Libraries							
🕀 📑 Documents							
🕀 🎝 Music							
🕀 🔛 Pictures							
🕀 🔣 Videos							

#### Target DR

📕 backup							
C Vetwork + 10.250.233.67 + backup							
Organize 🔻 New folder				:= - 🔝 🔞			
🚖 Favorites	Name *	Date modified	Туре	Size			
E Desktop Downloads	036967d4551e116b15070450058.fd	12/25/2013 7:06 PM	FD File	9,544 KB			
C Libraries Documents → Music Pictures Videos							



# 4.3 Preparing a replication target for restore

 In HP Data Protector, go to Devices & Media > Media > Pools, and right-click the Media Pool associated with the source container device and the backup set that needs to be restored. Click Export.



**NOTE**: If the media pool is protected and cannot be exported, you should perform a **Recycle** before **Export**.



2. Under **Devices & Media** > **Devices**, expand the source container device node, and delete the device object that is associated with the backup set.



3. Open the HP Data Protector CLI console, and then use the command utility **"omnidownload"** to download the source container library configuration from IDB.

🛤 Administrator: Command Prompt	
C:\Users\Administrator>omnidownload -library saving_67 -file c:\library.t	xt
C:\Users\Administrator>	
	-

NOTE: Refer to Appendix C for information about how to use the command "omnidownload".



4. Edit the file, modify or add the object information to point to the target DR Series system, and save this file.

	ii 🚛	brary	- Notep	ad		
	File	Edit	Format	View	Help	
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				0.250	2.233.67\backup\036967d4551d2e37e50000.fd"	
ų.				0.250	2.233. 67\backup\0369674455142e2507655007.fd"	
1				0.250	2.233. 67\backup\0369674155142e421507605000. fd"	
				0.250	233. 67 backup 0369674155142e507507605000d fd"	
				0.250	2.233. 67\backup\03696741551438e32507f050010_fd"	
				0.250	2 2 3 67 backup 0369674 551 4397 f 500 f 0 501 3 f 4"	
			-"\\1	0.250	233 67\backup\0369674551439c7b507f050016 fd"	
			- "\\1	0.250	223 67 backup 036967d4551d32c44507f050010 fd"	
			- "\\1	0.250	223 67 backup 036967d4551d3c04657f05001c fd"	
- î			- "\\1	0.250	223 67 backup 0369674455143c10c507f05001f fd"	
				0.250	223. 67\backup\0369674455143c1c55076050022 fd"	
				0.250	2.233. 67\backup\0369674455143c283507f050025.fd"	
				0.250	2.233.67\backup\0369674155143c263507f050028.fd"	
			- "\\1	0.250	2.223.67\backup\036067d4551d3cab3507f05002b.fd"	
			- "\\1	0.250	2.223.67\backup\036967d4551d3cfac507f05002a.fd"	
÷.				0.250	223.67\backup\036967455143d0a0507655021.fd"	
				0.250	2 23 67\backup\036967d4551d3d1ac507f050034 fd"	
				0.250	2 2 3 67\backup\036967d4551d3d328507f050037 fd"	
	1			0.200	3.522.01/bdc/db/220201d422243d210201102020111d	

5. Upload this modified configuration file to IDB using the command, **omniupload**.

📾 Administrator: Command Prompt 📃	Ι×
C:\Users\Administrator>omnidownload -library saving_67 -file c:\library.txt	÷
C:\Users\Administrator>omniupload -modify_library saving_67 -file c:\library.t>	ct
C:\Users\Administrator>	
	-



- perties for \\10.250.233.67\backup\036967d4551e116b15070450058.fd HP Data Protector Manag \_ 🗆 X 
   Image: Control of the second File Edit View Actions Help Devices & Media 3339 1 2 3 9 General | Slot <u>i</u> Media label Format Unknown Location [saving\_67: \\10.250.233.67\backup\036967d4551e116b15070450( m Drives • Cancel 🕵 Objects 🛛 \_Source 📕 \\10.250.233.67\backup ] Gi ec Import medium (media). Change Location..
- 6. Expand the device node, and **Import** the device object from the target device.

#### 7. Click Next.

ile Edit	View Actions	Help											
evices & Me	rdia			2								: L 16 <b>6</b> - C	2, 55
EVICES & ME		2.33. of Unberlies 1.23.	Exploring the set of the set	37	Meda F	Select the me ool A media pool backed up d	dia pool to which	n you w	vant to add t	l car o	ed medium.	d maintai	n your
			 						Next >		Einish		Cancel
								1					



- an Import Medium HP Data Protector N \_ 🗆 × File Edit View Ac 
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   Intermediation</td Devices & Media Specify additional options for the session. Ø 🔽 Import Copy as Original Log Al Logging -Finish Cancel <br/>
   🙀 Objects 🛛 cup 🤳 edwinz-w2k8-01
- 9. Select the Import Copy as Original checkbox, and then click Finish.

10. Verify that the import is done successfully.





### 4.4 Restoring from a target DR Series system

1. In the HP Data Protector Manager, in the **Context List** drop-down menu, select **Restore**. Run the restore session that is associated to the backup set, click **Restore**.

💼 E: [E: [Data]] - HP Data Protector Manager	
File Edit View Actions Help	
Restore	₩ <sup>(</sup> )
Restore Objects         Disk Image         Filesystem         Internal Database         MS Exchange 2010 Server         MS Exchange 2010 Server         MS Stachange 2010 Server         MS Suchange 2010 Server         MS Submits Sections         2013/07/19-4         Section 2013/07/19-2         Section 2013/07/18-2         Section 2013/07/18-8         Section 2013/07/15-8         Section 2013/07/15-7         Section 2013/07/15-8         Section 2013/07/15-4         Section 2013/07/15-4         Section 2013/07/15-3         Section 2013/07/15-4         Section 2013/07/15-4         Section 2013/07/15-5         Section 2013/07/15-4         Section 2013/07/15-4         Section 2013/07/15-4	Source       Destination       Options       Devices       Media       Copies       Restore Summary         Select the files and directories that you want to restore.       Image: Copies       Restore.       Image: Copies       Restore.         Image: Show full chain       Image: Copies       Show this session only       Image: Copies       Restore       Image: Copies       Image: Copies

2. Verify that the restore is done successfully.



# 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.

		DKCV6S1			Help   Log out			
	Dashboard Alerts Events Health Usage	Cleaner Sched	lule 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	Tue					
	Replication	Wed						
	Schedule	Thu	<u>1163</u>					
	Replication	Fri	5-5-41					
0	Cleaner	Sat						
1	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					



# 6 Monitoring deduplication, compression, and performance

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 a storage device for CIFS

There are two options for HP Data Protector to authenticate to the DR Series system through CIFS.

- DR joined into domain: Integrate HP Data Protector Server and DR Series System with Active Directory
  - o Ensure the AD user has appropriate ACLs to the DR Series System Container share
  - Set the HP Data Protector service to run with this AD user <Domain\User>
- **DR is standalone CIFS server**: Make sure HP Data Protector Inet service and CRS service use the same Log On user. DR Series System also has the same username and password defined in Local Workgroup Users.

Also make sure this CIFS user has appropriate access permission to the DR Series System container share. HP Data Protector services will use this user to authenticate to DR Series System share in Workgroup mode.

- 1. To set the password for local CIFS administrator on the DR Series System, log on to the DR using SSH.
  - a. Log on with username Administrator and password St0r@ge!
  - b. Run the following command:

authenticate --set --user administrator

```
administrator@EdwinZ-SW-01 > authenticate --set --user administrator
Enter new password for CIFS user administrator:
Re-enter new password for CIFS user administrator:
Changed administrator's password.
administrator@EdwinZ-SW-01 >
```

**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 HP Data Protector Service account to use the CIFS administrator account.

- 2. Launch the Microsoft Services Snap-in by clicking Start > Run > Services.msc > Enter.
- 3. Locate the Data Protector Inet and Data Protector CRS Service. Right-click **Properties** and click the Log On tab.

🐛 Server Manager						
File Action View Help						
(a = a) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2						
Server Manager (EDW/INZ-W2K8-0	Convision					
F P Roles	Services					
Features	🔍 Services					
Im Diagnostics		New A	Description	[ makes	distant of Freeze	Lunce to 1
E in Configuration	Data Protector Inet	Name ~	Description	scacus	Startup Type	Log On As
+ Task Scheduler	Stop the service	Application Experience	Daterminar		Manual	Local Service
Windows Prewall with Adve     Services	Restart the service	Application Information	Eacitater	Startad	Manual	Local Service
WMI Control		Application Lawar Cateway Service	Provides c	statos	Manual	Local Service
E A Local Users and Groups	Description:	Application Management	Processes	Owted	Manual	Local Surfero
F Se Storage	[HP Data Protector] - Backup client	Recknowed Intelligent Transfer Ser	Transford f	acarcou	Manual	Local System
C. C. Martin	service	Base Eltering Engine	The Bare E	Owted	Automatic	Local Service
		Certificate Propagation	Copiecuce	Stated	Manual	Local Surfee
		Cercificace Propagation	The CMG k	stattos	Manual	Local System
		COM Event Sustem	Supports 5	Oristed	Automatic	Local System
		COM+ Evene Application	Supports 5	Started	Manual	Local Service
		Computer Brauser	Maintages con	starteu	Picabled	Local System
		Conduction Management	Plankans a	" the sheet	Manual	Local System
		Contographic Services	Provides fo	Started	Automatic	Network S
		O Data Protector CBS	Fighter P	Stated	Automatic	Administ
		Data Protector Lock	DHP Data P	Stated	Automatic	Andminist
		Data Protector PDS	DHP Data P	Stated	Automatic	Local System
		O Data Protector LIProvy	DHP Data P	Started	Automatic	Local System
		OCOM Server Process Launcher	The DCOM	Started	Automatic	Local System
		O Darkton Window Managar Sersion	Provider D	Started	Automatic	Local System
		CHCR Cleat	Recisters a	Started	Automatic	Local Service
		Diagnostic Policy Service	The Diagno	Started	Automatic (D	Local Service
		O Disconstic Service Most	The Diagno.	stated	Manual Manual	Local Service
		Diagnostic System Host	The Diagno.		Manual	Local System
		O Disk Deframenter	Provides Di		Manual	Local System
		Ostributed Link Tracking Client	Maintains I	Started	Automatic	Local System
		O Distributed Transaction Coordinator	Coordinate	Started	Automatic (D	Network S
		O DMS Client	The DNS Clus	Started	Automatic	Network S
		Encrypting Ele System (EES)	Provides th.		Manual	Local System
		C Extensible Authentication Protocol	The Extens.		Manual	Local System
		Eurotion Discovery Provider Host	The EDPH	Started	Manual	Local Service
		Eunction Discovery Resource Public	Publishes t		Mapual	Local Service
		Group Policy Client	The servic	Started	Automatic	Local System
		Health Key and Certificate Manage	Provides X		Manual	Local System
		Chuman Interface Device Access	Enables de		Manual	Local System
1		. IKF and AuthIP IPsec Keving Modules	The IKFFY	Started	Automatic	Local System

**NOTE**: Do this step only when no backups are currently running, as restarting the services causes backup jobs to fail. Double-click 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.

ata Protector Inet Pro	perties (EDWINZ-W	2K8-01)	×
General Log On Reco	overy Dependencies	1	
Log on as:			
C Local System accou	<b>int</b> interact with desktop		
• This account	Administrator		<u>B</u> rowse
Password:	•••••	•	
<u>C</u> onfirm password:	•••••	•	
Help me configure user	account log on options	<u>.</u>	

- 4. Click **OK**.
- 5. After changing both services for HP Data Protector, select **Stop/Start** to restart the two services.

# B Creating a storage device for NFS

For NFS backup using the HP Data Protector, a target folder needs to be created as NFS share directory. This is the location to which backup objects will be written. This is not required while adding CIFS share.

- 1. Mount the DR Series System NFS share onto the NFS share directory which backup objects will be written in the HP Data Protector environment.
- 2. Verify the NFS share. One way is to try using the Linux command "cat /proc/mounts". The rsize and wsize of the nfs mount should be 512K.

# C User commands

#### Omnidownload

- Downloads information about a backup device and a library from the Data Protector internal Database (IDB).
- This command is available on systems with the Data Protector User Interface component installed.

Examples:

To review the information about a virtual tape library named "VTL" in ASCII format that will be saved as the file "libVTL.txt" to the directory "C:\Temp", run:

omnidownload -library VTL -file C:\Temp\libVTL.txt

#### Omniupload

- Uploads information about a backup device from an ASCII file to the Data Protector internal database(IDB).
- This command is available on systems with the Data Protector User Interface component installed.

Examples:

To modify library"Exabyte1" using the information in the file "/tmp/EXA", run:

omniupload -modify\_library Exabyte1 -file /tmp/EXA