

Setting Up Dell[™] DR Series Deduplication Appliance on BridgeHead[®] Healthcare Data Management

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Executive summary

This paper provides information about how to set up the Dell DR Series Deduplication Appliance as a backup to disk target for BridgeHead Healthcare Data Management 12B. 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 for other data management application best practices whitepapers at <u>http://www.dell.com/support/troubleshooting/us/en/04/Product/powervault-dr4100</u>, under "Manuals & Documentation".

Note: The DR Series Deduplication Appliance/BridgeHead Healthcare Data Management build version and screenshots used for this paper may vary slightly, depending on the version of the DR Series Deduplication Appliance/ BridgeHead Healthcare Data Management 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**".

System Dell DR4000 root , Admin	Properties Setup P System Summary System	wer Logs Alerts Console/Media em Details System Inventory	vFlash Remote File Share		
System	System Summary			- C	2
Batteries Fans Intrusion	Server Health				
Power Supplies	Status Component		Virtual Console Preview		
Removable Flaah Media	Batteries		Options : Settings		
oltages	Pana Pana			_	
Power Monitoring	Induston State		and the state of t		
	Power Supplie	s			
	Removable Fi	ish Media			
	Temperatures				
	Vuttages		Rel	Kesh Launch	
	Server Information		Guick Launch Tasks		
	Power State	ON	Power Ots / OFF		
	System Model	Dell DR4000	Power Cycle System (cold boot)		
	System Revision	н.	Launch Virtual Console		
	Dystem Host Name	DR4000-DKCV6S1.asglab.roundrock	View System Event Log		
	Operating System	CentOS	View IDRAC Log		
	Operating System Vers	on release 5.4 (Final) Kernel 2.5.18-164.e	Update Firmware Reset/ORAC		
	Service Tag	DKCV6S1			
	Express Denvice Code	29529104401			
	BIOS Version	1.9.0			
	Firmware 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.).

.ogin		Reset Password
	Please enter your password:	
	Username: administrator	
	Log in	

9. Join the DR Series Deduplication Appliance to Active Directory.

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.

- DR4100 DØLL Help | Log out edwinz-sw-01 nz-sw-01 ocarina local Dashboard Global View I Dashboard System State: optimal HW State: optimal Number of Alerts: 0 Number of Events: 705 Alerts Events Health Capacity Storage Savings Throughput Usage Statistics: Container Zoom: 1h 1d 5d 1m 1y 1 Zoom: 1h 1d 5d 1m 1v 0 Physical Statistics: Replication Refreshing Savings (%) MiB/s 1.00 Storage Containers 0.75 75 Replication 50 0.50 Compression Level 25 0.25 Schedules Replication Schedule ¢ 0.00 0:20 0:30 0:40 0:50 1:00 1:10 Time (minutes) 0:20 0:30 0:40 0:50 1:00 1:10 Cleaner Schedule Time (minutes) System Configuration Used (21.29 GiB) Read Total Savings Free (142.48 GiB) Active Directory Local Workgroup Users System Information Email Alerts Admin Contact Info Product Name: DR4100 Total Savings: 55.06 % Password Email Relay Host Total Number of Files in All Containers: System Name: edwinz-sw-01 1 ? 99.0.0517.0 Software Version: Number of Containers: 2 ate and Tir Thu Sep 26 01:12:47 2013 Current Date/Time: Number of Containers Replicated: 0 Support US/Pacific Current Time Zone: ... 47 GIB (?) Active Bytes: Diagnostics Cleaner Status: Idle Software Upgrade License Copyright © 2011 - 2013 Dell Inc. All rights reserved.
- Select Active Directory from the menu panel on the left side of the management interface.

• Enter your Active Directory credentials.

-	Global View	Active Directory	Jón
-	Dashboard	Settings	
	Events Health Usiane	The Active Directory settings have not been configu	red. Click on the Jow link to configure them
	Statistics: Container	Active Directory Configuration	
-	Storage Containers Replication	Domain Name (FODN)*	* = fields are required.
=	Compression Level Cilents Schedulos	Password*: Org Unit	Enter Active Directory Info
	Cleaner Scheidule System Coefiguration		Cancel Join Domain
	Metworking Active Directory Local Workgroup Users Email Alerts		
	Admin Contact Info Password Email Relay Most		
	Date and Time		
	Support Diagnostica 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.

	CR4100 edwinz-sw	-01					Не	lp Log out
ed	winz-sw-01.ocarina.local 👻	Containers			•	Creat	e Ed 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							
	Statistics: Replication							
	Storage							
	Containers							
	Replication							
	-Compression Level							
	Schedules							
	Replication Schedule							
	Cleaner Schedule							
-	System Configuration							
	Networking							
	Active Directory							
	-Local Workgroup Users							
	-Email Alerts							
	-Admin Contact Info							
	Password							
	-Email Relay Host							
_	Date and Time							
	Diagnostics							
	-Diagnosucs							
	- Soliware Opgrade							
	LIGHING							
Cop	vright © 2011 - 2013 Dell Inc. A	l rights reserved.						



11. Enter a Container Name and select Connection Type, select the Enable CIFS or Enable NFS check box. BridgeHead HDM supports both CIFS and NFS protocols.



12. Select the preferred client access credentials.

	Create New Container:		
DØL		* = required fields	i) Help
	Assign a name to the container, select its type, access protocol to	o use and add clients that need access.	
edwinz-sw-	Container Name [*] : sample	Mame the container	tatistics
Global Dashbo	Connection Type [*] : ○ No Access ◎ NAS (NFS, CIFS) ○ Rapid D _ NFS -	Data Access (RDA) ⑦	ntainers
Alerts	NFS access path: 10.250.242.167:/containers/sample	CIFS share path: \\10.250.242.167\sample	alact
Health	Use NFS to backup UNIX or LINUX clients.	Use CIFS to backup MS Windows clients.	
Contair	Client Access:	Client Access:	
Replica	Open Access (all clients have access)	Open Access (all clients have access)	
Clients	NFS Options: w Insecure Select cliv o ro	ent access credentials	
Schedu	Map root to:		
Replica	-select-		
+ System			
🕂 Suppor			
Copyright © 2			
		Cances Create a New Container	

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

Backup console (BridgeHead Healthcare Data Management Server, BridgeHead Healthcare Data Management Clients)

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

Containers				Creat	e Edit Delete Dis	play Statist
iew						
Massage						
Messaye	added container "cample"					
	added NES connection for cont	ainer "eemple				
Successfully	added CIES connection for cont	ainer sample	· ·			
• Successionly	added CIF's connection for cont	amer sampi	e.			
on Statistics Number of Containers: 2					Container Pat	h: /contair
Containers	Files	NES	CIES	RDA	Replication	Selec
backup	0	~	~		Not Configured	0
	0	~	~		Not Configured	0
sample						
sample						
Schedule						
Schedule						
es ion Schedule Schedule Configuration						

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

	Edit Container: sample		
DEL		* = required fields) Help
edwinz-sw-	NES Success nath: 10 250 242 167/(containers/sample)	CIES share nath: \\10.250.242.167\sample	tatistics
Global Dashbo Alerts	Use NFS to backup UNIX or LINUX clients.	Use CIFS to backup MS Windows clients.	ntainers
Events Health	Client Access: Open Access (all clients have access)	Client Access: Ø Open Access (all clients have access)	elect
Usage Contain Replica	NFS Options: orv Insecure oro		0
-Contain Replica Clients	Map root to:		
Schedu Replica Cleane			
+ System + Suppor			
Copyright © 2		Cancel Modify this Container	



15. Click Cancel to exit.

	Edit Container: sample		
		* = required fields) Help
edwinz-sw-(NFS	CIFS	
Global V	NFS access path: 10.250.242.167:/containers/sample	CIFS share path: \\10.250.242.167\sample	tatistics
Dashbo Alerts	Use NFS to backup UNIX or LINUX clients.	Use CIFS to backup MS Windows clients.	ntainers
Events	Client Access:	Client Access:	elect
Usage	Open Access (all clients have access)	Open Access (all clients have access)	0
Contair	rw insecure		•
Replica	© ro		
-Contair	Map root to:		
Replica	root		
Schedu			
Replica			
Cleane			
+ Suppor			
Copyright © 2			_
		Cancel Modify this Container	



2 Set Up BridgeHead Healthcare Data Management

2.1 Procedure for the Windows Environment

1. Open **Bridge HDM Management Console**. Under **Backup Node**, click **Configuration**. Double click to open the Configuration File.

👍 Management Console - Backup Node	Management Console - Backup Node					
🚱 💊 General 📊 Report Manager 🛛 💆 Lo	og Viewer 🛛 🤖 Robot Manager					
Open Celete Diagnostics Guides						
General Actions Guides						
🖃 👍 Management Console	Backup Node > Configuration					
🛱 😳 Control Node	Name 🛊	Path				
	👼 Configuration File	C:\Htape\BN\HPT_BN.ini				
Queue Manager Schedule Manager Gervice Manager Update License Gervice Node Gonfiguration Gontrol Utility Configuration Gonfiguration Gervice Manager Robot Manager Configuration Gervice Manager Configuration Gervice Manager Configuration Gervice Manager Configuration						



2. Search **Staging_Area** in text editor. Use DR container share UNC path for the **Staging Area Path**, define a **Staging Area Name**. Save the Configuration file.

III HPT_BN - Notepad	
File Edit Format View Help	
; Staging_Area<_nn>_Path ; Specifies the full path of the staging area. For example ; C:\Stage\Stage1\. The default is no path, i.e. no staging area. ; Staging areas have to be defined in strict ascending order. ; For example if one defines staging areas 01, 02, 03, 05, 06 and 07, ; only staging areas 01, 02 and 03 will be taken into account. ; If not defined, Staging_Area_01_Path defaults to the Stage ; sub-folder of the Backup Node. Typically C:\Htape\BN\Stage.	
Staging_Area_01_Path = \\10.250.242.167\backup\	
; ; ; Staging_Area<_nn>_Name ; Specifies a name for the staging area. This setting is optional. ; If you specify a staging area name, you can ask the Backup Node to ; select that particular staging area, rather than leave the choice ; to the Backup Node. The default is no name.	
; Staging_Area_01_Name = HDMCIFS	
Staging_Area_02_Name = Stage2	
Staging_Area<_nn>_Max_Size Specifies the maximum size of the staging area, in MB. This setting is optional. If you do not specify a maximum, the size of the staging area is limited only by the amount of free disk space available. The default is no maximum size, i.e. limited only by the amount of free disk space available. Staging_Area_01_Max_Size = 400 Staging_Area_02_Max_Size = 600	

Note: The Backup Node for BridgeHead Healthcare Data Management requires appropriate permissions to the DR Series Deduplication Appliance CIFS Share for the step below to complete successfully. See **Appendix A** for setting up the BridgeHead Healthcare Data Management Backup Node account correctly. This should be done before the next step.



2.2 Procedure for Unix/Linux Environment

Notes:

Make sure that you can mount/verify the NFS share from the UNIX/Linux backup node. Please see **Appendix B** for how to mount/verify the NFS share.

The procedure for the Unix/Linux Environment is very similar to the procedure for the Windows Environment. One difference is that the configuration file of Backup Node is **ht_media.def**, the default location for the file is **"/etc/ht_media.def**".

For other details, please refer to the Procedure for the Windows Environment.



3 Create a New Backup Job with DR Series Deduplication Appliance as the Target

1. Open Bridge HDM Management Console. Click Schedule Manage under Control Node. Double click to open the Schedule Manager.



2. Choose Template schedules contain suitable defaults for various job types. Click OK.

Control Node Schedule	Manager			$-\Box \times$
Schedule Tools H	elp			۲
Create Modify	Display Display Compare Export			
New Modify Organise	Create Schedule	×		
Schedule Name DavidLinuxBN NF5 DavidLinuxBN NF5 Dot DD2 Dd1 Dd1 Dell Testing Edwin testing Incr Edwin testing UnuxBN NF5 WIN_CN_Recovery WIN_CN_Recovery2 WIN_CN_Recovery3 Daily operation Daily operation Daily operation	A schedule describes the dates on which jobs are to be run and media to be used (if any). New schedules can be based on template schedules or existing schedules. Template schedules contain suitable defaults for various job types. Existing schedules are those already defined in the schedule database. OK Cancel		Monthly	
[1]				
Total:14 Selected:0		_		

3. Choose **None** the click **OK**

Control Node Schedule N	lanager	- 🗆 ×
Schedule Tools He	p	۲
Create Modify Organise	Display Import Compare Export	
Schedule Name		dy 🕅 Monthly
David inuxBN NES	Select the most appropriate template	ay Hondrily 4
DavidLinuxBN NFS_Incr DD DD EDD2 EDdI Testing Edwin testing Incr Edwin testing Uinux BN NFS WIN_CN_OM WIN_CN_Recovery WIN_CN_Recovery2 WIN_CN_Recovery3 Daily operation E DavidBackup E test	Archiving Backup Other Morning Operation Evening Operation None None None OK Cancel	Image: second
•		Þ

4. Populate all the required fields and choose Media Manager under Media Management, click New.

😞 🔻 Control Noc	Schedule M	anager								×		-	$\square \times$
Schedule	CSchedule N	Jame an	ıd Comr	ment -									۲
	Name:	Da	ily_Sch	edule									
Create Modify	Comment:	Comment:											
New Modify O	Recurrence	es											
Schedule Name	Becurren	ce Nam				L Auto	cave	Erequency	Scope	New	M	Monthly	5
DavidLinuxBN NFS	Kecurrer	ice Nami	<u> </u>			Mult	Save	Trequency	JCOpe	14699			
DavidLinuxBN NFS_Incr										Clone			
DD													
DD2										Modify	L		
Dell Testing										↓	Ŀ.,		
Edwin testing Incr										Rename	Ŀ-		
Edwin testing											L		
	•								•	Delete	b.		-
WIN_CN_Decovery											E.		
WIN CN Recovery2	– Calendar –								r Media Ma	nagement	F.		- F
WIN CN Recovery3				T						and gomente	E.		- F
	Nove	ember	-	1		201:	3 🖃		O No	ne	E.		_
DavidBackup	SUN	MON	TUE	WED	THU	FRI	SAT		• Me	dia Manager			
test						1	2						
	2	4	Б	c	7	o	- 0						
	3	4	10	10	1.4	10	3						
	10	11	12	13	14	10	16		E×	clude Dates			
	17	18	19	20	21	22	23			1			
	24	25	26	27	28	29	30			Counters			
									ОК	Cancel			
Total:15 Selected:0									-				



DELL

5. Choose **Disk** in **Media Management** option then click **Advanced**.

Create	Schedule Sche Nam Com	Manager Seneral Recurrence name: Daily Scope	×
New Modify O	Recu	Full C Incremental	
DevidLinuxBN NFS_Incr DD DD DD DD DDI DI DDI DDI DDI DDI DDI DDI	Calei	Frequency Daily Run daily at the specified times. Weekly Run on the specified days of a week. Monthly Run on the specified days of a month. Yearly Run on the specified days of the year. Media Management Media Management option: Disk 	
•		Autosave enabled Advanced Sack Next > Cancel	

6. Choose all the required fields then click **Next**

Control Noc Sched	le Manager	_ = ×
Schedule	Run Dates	۲
Create Modify Q	Days of the week and start times when this recurrence will be scheduled to run.	
Recu	Monday Edit days	Monthly E
Re DavidLinuxBN NFS DavidLinuxBN NFS_Incr DD DD DD2 DD2 DD2 DD2 Edwin testing Edwin testing Linux BN NFS	Run at these times:	
WIN_CN_OM	12:00AM	
WIN_CN_Recovery2 Cale WIN_CN_Recovery3 Daily operation DavidBackup test	Remove All	
	<pre>< Back Next > Cancel</pre>	
Total:15 Selected:0		•

7. Enter Stage Area Name, Application as BACKUP, click Finish.

Control Noc	Schedule	Manager		×	_ = ×
Schedule	-Sche M	ledia Properties		×	0
	Nam	Disk Properties		- EI	
Create Modify	Com	Stage Area Name:			
New Modify O	Recu	Application:	BACKUP		
Schedule Name	Rei				Monthly S
DevidLinuxBN NFS_Incr DD DD DD DDI DDI DdI Dell Testing Edwin testing Incr Edwin testing Linux BN NFS WIN_CN_Recovery WIN_CN_Recovery2 WIN_CN_Recovery3 Daily operation DavidBackup test	Cale				
Total:15 Selected:0			< Back Finish	Cancel jel	

8. Click **OK**.

Control Not Schedule Manager	
Schedule Schedule Name and Comment	0
Name: Daily Schedule	
Create Modify Comment:	
New Modify O Recurrences	
Schedule Name	Monthly 📴
Recurrence Name Autosave Frequency Scope New	
DavidLinuxBN NFS_Incr Daily Yes Daily Full	
DD2 Modify	
E Dell Testing	
Edwin testing Incr Rename	
Edwin testing	
Delete	
WIN_CN_Recovery	
WIN_CN_Recovery2 Calendar Management	
November 2013 C None	P
3 4 5 5 7 8 9	
10 11 12 13 14 15 16 Exclude Dates	
17 18 19 20 21 22 23	
24 25 ° 26 ° 27 ° 28 29 30 Counters	
Total:15 Selected:0	



9. On **Bridge HDM Management Console**, click **Object Manager** under **Control Node**, which displays the **Object Manager** in the list. Double click to open the **Object Manager** on right-hand side pane.



10. Choose **Template objects contain default settings for particular tasks such as platform or database backups, storage policy application or reporting,** click **Next.**

😞 🔻 Control Node Ol	bject Manager						- = ×
Object View	Database Tools	Help					0
Restore Utility Restore Utility Save or run	e 🔂 🕅 Wizard urnal 🚱 🗃 All fields veset 😱 🖬 Group of f	Single field Autosave 👻 ields Modify	Delete Delete Undelete Rename Organise	Create	Clone Recovery	Select all Select none Select special Select	
Object		Service Node				Backup Node List	
David_Unix_to_Unix David_Unix_to_Win David_Win_to_Win Dell_Test DUtoU2 Edwin_object recovery Saving_Unix_to_Unix test WIN_CN_Recovery2 WIN_CN_Recovery3	Create Object Create a new object from a template or an An object describes wha describe backups, repor template objects or exis Template objects as application or C Existing object database.	existing object t to run and where and is, storage policy etc. No ing objects. acts contain default setti platform or database ba reporting. ts are those already def	when to run it. Ob aw objects can be ngs for particular ackups, storage po ined in the object	jects can based on		localhost david-w2k8-04 localhost localhost localhost localhost localhost localhost localhost localhost localhost localhost	
•		< Back	Next >	Cancel			Þ
Ready					Total:12 Dis	played:12 Selected:0	:



11. Choose **WIN** in the template list then click **Next**.

Control Node Object Manage	±1'	- 🗆 X
Object View Database	Tools Help	0
Willity Westore Restore Save Utility Ust Journal Functions Select Object David_Unix_to_Unix David_Unix_to_Win David_Unix_to_Win Del_Test DutoU2 Edwin_object recovery Saving_Unix_to_Unix test WIN_CN_Recovery WIN_CN_Recovery3	Wizard Single field Delete Autorave v yicct : Template dect the most appropriate template WiN_VSS_Local WIN_VSS_Local WIN_State WIN_State WIN_State_VSS_Local WIN_State WIN_State_SS_Local WIN_Mirror_IDR WIN_Mirror_IDR WIN_Mirror_IDR WIN_Mirror_IDR WIN_Mirror_RemoteIDR WIN_Snap2IDR WIN_IDR2Backup kente	Cancel
Ready		Total:12 Displayed:12 Selected:1 .:

12. Enter the Service Node related info with the valid file path for backup data source, click Next.

😞 🔻 Control Node Obje	ct Manager	- = ×
Object View	Database Tools Help	0
Restore Utility Save	Create Object	Select all Select none
Functions Object	Service Node	Select Backup Node List
David_Unix_co_Unix David_Unix_co_Win David_Win_to_Win Dell_Test	A Service Node is a computer whose data is saved or restored by an operation initiated a Control Node. During a save, data is collected and sent to a Backup Node.	localhost davidd-w2k8-04 localhost localhost
Edwin_object recovery Saving_Unix_to_Unix	Computer: localhost 💌 User: administrator	localnost localnost localnost localnost
WIN_CN_Recovery WIN_CN_Recovery2 WIN_CN_Recovery3	Password: ••••••	localhost localhost localhost localhost
	Path: C:\dataset	
	< <u>Back</u> <u>N</u> ext > Cancel	
•		•
Ready	Total:12 D	isplayed:12 Selected:1 .::



13. Enter Backup Node related info, click Add/Edit password(s)

Control Node Objec	t Manager				- 🗆 X
Object View I	Database Tools	Help			۲
Restore Save	Create Object	Single field	💥 Delete	Clone	Select all Select none
Utility or run Pust Saves Functions	Backup Node List				Select Backup Node List
David_Unix_to_Unix = David_Unix_to_Win David_Win_to_Win Dell_Test DULoU2	Backup Nodes sto list of nodes, Sav node, The list car	re data on disk or tape. If e operations that fail are a repeat the same node for	you specify a comm automatically rerun o r simple automatic re	a separated n the next trv.	localhost davidd-w2k8-04 localhost localhost localhost
Edwin_object recovery Saving_Unix_to_Unix test	Computer(s):	ocalhost dministrator		_	localhost localhost localhost localhost
WIN_CN_Recovery WIN_CN_Recovery2 WIN_CN_Recovery3	Password(s):		Add/Edi	t password(s)	localhost localhost localhost
		< <u>B</u> ac	:k <u>N</u> ext >	Cancel	
<u> </u>					Þ
Ready				Total:12 Dis	played:12 Selected:1

14. Enter the Passwords for Backup Node then click **OK**

😞 🔻 Control Node Object Ma	nager	- 🗆 X
Object View Data	ase Tools Help	0
Restore Restore Restore List Journal Restore List Journal Vility or run List Saves List Saves Utility or run David Unix_to_Unix David Unix_to_Win David Win to Win David Win to Win	Wizard Single field Delete Clone All fielde Autorave Tindelete Derowant ad Edit password(s) X Passwords OK OK Bé Cancel Derowant	Select all Select none Select special Select kup Node List Ihost idd-w2k8-04 Upoet
Dell_Test Dell_Test DUtoU2 Edwin_object recovery	lis i i i i i i i i i i i i i i i i i i	lhost Ihost Ihost Ihost
Saving_Unix_to_Unix test WIN_CN_Recovery WIN_CN_Recovery2 WIN_CN_Recovery3	U: Pa Distance	host Ihost Ihost Ihost



15. Click Next. Please refer to Appendix A for User and Password.

📀 🔻 Control Node Obje	ct Manager	- 🗆 X
Object View	Database Tools Help	۲
Object David_Unix_to_Unix David_Unix_to_Win David_Win_to_Win David_Win_to_Win Dell_Test DUtoU2 Edwin object	Single field Delete Clone Select all Create Object Select all Select none Backup Node List Select special Backup Nodes store data on disk or tape. If you specify a comma separated list of nodes, Save operations that fail are automatically rerun on the next node. The list can repeat the same node for simple automatic retry. Backup Node List Decemption	
Ecovery Saving_Unix_to_Unix test WIN_CN_Recovery WIN_CN_Recovery2 WIN_CN_Recovery3	Computer(s): ocalhost localhost User(s): administrator localhost Password(s): ******* localhost Add/Edit password(s) localhost	
	< <u>B</u> ack <u>N</u> ext > Cancel	

16. Accept the defaults and click **Next**.

Control Node Obje	ct Manager	- 🗆 ×
Object View	Database Tools Help	۲
Object View Restore Save List Journ Restore Save List Journ Utility or run List Saves Utility or run List Saves David_Unix_to_Unix List Saves David_Unix_to_Win David_Win_to_Win David_Win_to_Win Dell_Test DUtoU2 Edwin_object recovery Saving_Unix_to_Unix test WIN_CN_Recovery WIN_CN_Recovery3 WIN_CN_Recovery3	Database Tools Help Image: Solution of the second seco	
•		▶
Ready	Total:12 Displayed:12 Selected:1	



17. Select Mail Recipients, click Next.

😞 🔻 Control Node Objec	t Manager					×
Object View I	Database Tools	Help				0
Restore	📅 🛐 Wizard	Single field	💥 Delete	Clone	Select all	
Restore Save Utility or run 🗃 List Saves Functions	Create Object Select Mail Recipier	nts			Select special Select	
Object					Backup Node List	
					davidd-w2k8-04	
David_Win_to_Win	Recipients				localhost	
Dell_Test	avia.deng@sort/	vare.dell.com			localhost	
DUtoU2	Committee Commit	vare.ueii.com			localhost	
Edwin_object					localhost	
					localhost	
					localhost	
					localhost	
WIN CN Recovery2					localhost	
WIN_CN_Recovery3	Additional recipients (s	emicolon separated) —			localhost	
		< <u>B</u> a	:k <u>N</u> ext >	Cancel		
		<u> </u>				
<u></u>						
Ready				Total:12 Dis	played:12 Selected:1	

18. Choose the Schedule, click **Next.**

Control Node Obje	ect Manager	. 🗆 ×
Object View	Database Tools Help	0
Restore Constructions	Single field Delete Clone All fields Autorave Delete Select all Create Object Select asuitable schedule Select asuitable schedule	
Object	Backup Node List	
David_Unix_to_Win David_Win_to_Win	Schedule: Daily Schedule Schedule Manager	
Dell_Test DUtoU2	Calendar Refresh schedules list localhost November 2013 Incalhost localhost	
Edwin_object recovery Saving Unix to Unix	SUN MON TUE VVED THU FRI SAT localhost localhost I 1 2 Incalhost Incalhost	
test WIN_CN_Recovery	3 4 ^o 5 ^o 7 8 9 10 11 ^o 12 ^o 14 15 16	
WIN_CN_Recovery2	17 18 19 20 21 22 23 24 25 26 27 28 29 30 localhost	
	< <u>Back</u> <u>N</u> ext > Cancel	
•		Þ
Readv	Total:12 Displayed:12 Selected:1	

D¢LL

19. Accept the defaults and click **Next**

🧢 🔻 Control Node Obje	ct Manager	- 🗆 ×
Object View	Database Tools Help	0
Restore	Single field Single field Select all	
Restore Save Utility or run 🗇 List Saves Functions	Create Object	
Object	Backup Node List	
David_Unix_to_Unix David_Unix_to_Win Dell_Test DUtoU2 Edwin_object recovery Saving_Unix_to_Unix test WIN_CN_Recovery WIN_CN_Recovery3	Tick the box below to override the start times in the schedule. Incremental runs are not normally used for non-backup objects. Iocalhost Iocalhost Override schedule start times Iocalhost Iocalhost Iocalhost Full: D9:00 PM Iocalhost Iocalhost Incremental: D7:00 PM Iocalhost Iocalhost Iocalhost Iocalhost Iocalhost Iocalhost	
	< Back Next > Cancel	
•		Þ
Ready	Total:12 Displayed:12 Selected:1	

20. Accept the defaults and click **Next**.

😞 🔻 Control Node Obje	ct Manager				- 1	= ×
Object View	Database Tools	Help				0
Restore Save List Journ	Create Object	Single field	Delete	Clone	Select all Select none	
Functions Object	Queue Names				Select Backup Node List	
David_Unix_to_Unix David_Unix_to_Win David_Win_to_Win Dell_Test DutoU2	Once scheduled, ju arrives and sufficie to group jobs for c	obs are held in queues. J ent resources are availab common resources and fo	obs run as soon as th Ie. Different queues o r easy monitoring.	eir start time an be used	localhost davidd-w2k8-04 localhost localhost localhost	
Edwin_object recovery Saving_Unix_to_Unix test	Full: Incrementa	I: <htq></htq>	- -	-	localhost localhost localhost localhost	
WIN_CN_Recovery WIN_CN_Recovery2 WIN_CN_Recovery3	Restore:	<htq></htq>		-	localhost localhost localhost	
		P	ck Next >	Cancel		
			IN NEXU 2			
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Ready				Total:12 Dis	played:12 Selected:1	



21. Enter the Name of **Object** then click **Finish** to save it.

Control Node Obje Object View	ct Manager Database Tools Help	- □ × @
Object Pestore Restore Save Utility or run David_Unix_to_Unix David_Unix_to_Win David_Unix_to_Win Dell_Test DUtoU2 Edwin_object recovery Saving_Unix_to_Unix test WIN_CN_Recovery WIN_CN_Recovery3	Create Object Wizard Wizard With Galacte Create Object Object Name(s) Each object must be given a unique name within the object database Consider OS naming conventions and restrictions. Names associate node name and path are recommended. Press Create to create wit finishing. Name of object to create Back Finish	Clone Select all Backup Node List Image: Select secial select Select Select Backup Node List Image: Select secial select Image: Select secial select Select Backup Node List Image: Select secial select Image: Select secial select Select Image: Select secial select secial select Select Image: Select secial s
Ready		Total:12 Displayed:12 Selected:1

22. The backup object summary is displayed on the **Object** list. Right-click the object to run the backup.

📀 🔻 Control Node Object Mana	ger					- 🗆 ×
Object View Databas	e Tools	Help				0
Restore Save Utility or run Dits Saveset	Wizard All fields Group of fields	Single field Autosave 👻 Elds Modify	Delete Delete Undelete Rename Organise	Clone	Select all Select none Select special Select	
Object		Service Node			Backup Node List	
Backup sample		localhost			localhost	
Day View History		10.250.241.193			localhost	
Save or Run		10.250.242.94			davidd-w2k8-04	
Restore		davidd-w2k8-04			localhost	
Del List Journal		localhost			localhost	
DUI List Saveset		10.250.242.94			localhost	
Edv		davidd-w2k8-04			localhost	
		localhost			localhost	
Sa\ Modify >		10.250.241.193			localhost	
tes Delete		10.250.241.193			localhost	
Display		davidd-w2k8-04			localhost	
		localhost			localhost	
WIN_CN_Recovery3		localhost			localhost	
[+]						Þ
Readv				Total:13 Dist	plaved:13 Selected:1	



23. When **Save or Run Operation** window opens, click **Start On-Line** to start the backup.

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Object View Da	tabase Tools	Help				0
Restore Backup sample David Unix to Unix David Unix to Win WIN_CN_Recovery WIN_CN_Recovery2 WIN_CN_Recovery3	Save or Run Opera Object(s) Object Name Backup_sample Backup Back		Operation 1 Operation 1 Recurrence Daily Start Time for Sub 11/28/2013 10:23 PM	art On-Line Submit Autosave Pattern Close	Select all Select all Select none Select special Select special Select localhost localhost	
•						Þ

24. The **Object Manager Operation Log** window displays the progress of the backup session. **Operation status** has details of the backup job.

Control Node Obje	ct Manager			- = ×
Object View	Object Manager Operati	on Log	×	۲
Restore	Service Node		[lose	🗄 Select all
List Jouri	J HI Service Node version	WINdows64 4.2-20 Build 422001		Select none
Restore Save Utility or run 🗃 List Save	Operating System:	Windows64 6.1.7601 SP1	Details	Select special
Functions	Node Name:	DAVIDD-W2K8-04		Select
Object			ébort	Backup Node List
Backup_sample	Service Node Input Param	neters	Enour	localhost
David_Unix_to_Unix	Object Name:	Backup_sample		localhost
David_Unix_to_Win	Operation Tunes	Size (VP)		davidd-w2k8-04
David_Win_to_Win	Operation Type.	J 5126 (KB): J0		localhost
Dell_Test	Object Path:	C:\dataset		localhost
DUtoU2	File Dattern			localhost
Edwin_object	The Factorn.			localhost
recovery	Backup Node:	localhost 4232		localhost
Saving_Unix_to_Unix	Datacet Name:	(Backup, sample D001(, DISK, 'HDMCIES		localhost
test	Dataset Name.			localhost
WIN_CN_Recovery	Operation Status			localhost
WIN_CN_Recovery2				localhost
WIN_CN_Recovery3				localhost
	SN Processed 510 butes	2 items (22:26:22)		
	SN Processed a total of 51	lo bytes, 2 items		
	SN iopcompl, Operation co	mpleted on Thu Nov 28 22:26:23 2013.		
	CN csnmexex, Control No	de closed connection.		
	CN cposproc, Command fil	e: C:\Htape\CN\CMD\cn_erroremail.bat		
	CN cposproc, Postprocess	ing script returned OK.		
	1			
•	Auto-refresh every:	5 主 seconds		F
Ready			Total:13 Dis	played:13 Selected:1

4 Set up DR Native Replication & Restore from Replication Target Container

4.1 Build Replication Relationship between DRs

1. On source DR, select **Replication** from the menu panel on the left side of the management interface, click **Create.**

	М				root (Log	out) Help
edwinz-sw-01.ocarina.local	Replication		Create Edit	Delete Stop Start	Bandwidth Displ	ay Statistics
 Dashboard Alerts 	Number of Source Replication	is: 0				
Events	Local Container Name	Role	Remote Container Name	Peer State	Bandwidth	Select
Healm						
Container Statistics						
Replication Statistics						
- Storage						
Containere						
Replication						
+ System Configuration						
+ Support						
Copyright © 2011 - 2013 Dell Inc.	All rights reserved.					

2. Select a local container as source container, select **Map to container on remote system**, enter Target DR related info, click **Retrieve Containers**, select populated target container from the list, click **Create Replication**.

Create Replication		* – required field
Step 1: Select a local container *	Step 3: Select a role *	* = required fields Create container on remote system Map to container on remote system Username*: administrator Password*: Peer System*: 10.250.233.67 Remote Container: Retrieve Containers(s) backup
		Cance Create Replication

3. Verify that the replication is created successfully. Make sure **Peer Status** is **Online** for the replication session.

					root (Log	out) Help		
edwinz-sw-01.ocarina.local	Replication		Create Edit I	Delete Stop Start B	andwidth Displ	ay Statistics		
Dashboard Alorte	Message							
- Events - Health	Successfully ad	ded replication	n for container 'backup'.					
Usage								
-Container Statistics	Number of Source Replicatio	ns: 1						
Replication Statistics		Dele	Demote Contained Name	Dana Stata	Developideb	Coloret		
- Storage	Local Container Name	Role	Remote Container Name	Peer State	Bandwidth	Select		
Containers Replication	backup	source	10.250.233.67 backup	Online	Default			
Clients								
- Schedules								
Replication Schedule								
System Configuration								
Support								
Copyright © 2011 - 2013 Dell Inc. All rights reserved.								



4.2 Backup to Source DR (Optional: only when there is no backed up data on source container)

1. Add both source DR and target DR as **Stage Area** on **Bridge HDM**, create a New Backup Job with source DR as the Target. Make sure the backup is successful.

🗸 📥 🔪 🔹 Control Node Ubje	ct Manager			X
Object View	Database Tools	Help		۲
		- II 🗛 II		Coloct all
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2. Click Configuration of Backup Node, which displays Configuration File, Double click to open the Configuration File.

_	
4	HPT_BN - Notepad
F	File Edit Format View Help
•••••	user. If no name is specified, the staging area can only be used for automatic staging area selection. If no maximum size is specified, the staging area size is limited only by the amount of free disk space available.
., ., ., ., ., ., ., ., .,	Staging_Area<_nn>_Path Specifies the full path of the staging area. For example C:\Stage\Stage1\. The default is no path, i.e. no staging area. Staging areas have to be defined in strict ascending order. For example if one defines staging areas 01, 02, 03, 05, 06 and 07, only staging areas 01, 02 and 03 will be taken into account. If not defined, staging_Area_01_Path defaults to the stage sub-folder of the Backup Node. Typically C:\Htape\BN\Stage.
, S	staging_Area_01_Path = \\10.250.242.167\backup\ staging_Area_02_Path = C:\stage\stage2\
., ., ., ., ., .,	Staging_Area<_nn>_Name Specifies a name for the staging area. This setting is optional. If you specify a staging area name, you can ask the Backup Node to select that particular staging area, rather than leave the choice to the Backup Node. The default is no name.
; 5 5	staging_Area_01_Name = HDMCIFS staging_Area_02_Name = Stage2

3. Modify the Stage Path to point to target DR container path, then save the changes





4. Go to **Backup Node** -> **Service Manager**, restart the Service of **Backup Node**



4.3 Restore from Replication Target

1. On **Bridge HDM Management Console**, open **Object Manager**, the backup object summary is displayed under **Object** list. Right-click the object and choose **Restore**

😞 🔻 Control Node Object Ma	nager					- 🗆 ×
Object View Data	oase Tools	Help				0
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Functions		Nodify	Organise	New	Select	
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DUte List Saveset		10.250.242.94			localhost	
Edw Restore Litility		davidd-w2k8-04			localhost	
reco Rescore Geney		localhost			localhost	
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		089100-992N0-04			localitosc	
[•]						▶
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2. Select the Saveset, then click Start On-Line.

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Object View D	Restore Operation	X	۲
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Restore Save Utility or run List Saveset	Generation(s)	Submit	Select special
Object	Gen. Start Date Start End Saveset	Details	Backup Node List
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Win_Saving	Service Node <localhost></localhost>		localhost
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	Properties		
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Ready		Total:15 D	isplayed:15 Selected:1 .::

3. Verify that the restore job completes successfully.





Set Up the DR Series Deduplication Appliance Cleaner

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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.

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Monitoring Deduplication, Compression and Performance

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After backup jobs have completed, the DR Series Deduplication Appliance tracks 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. Backup jobs with a 12-week retention will average a 15x ratio in most cases.





A Appendix

A.1 Create a Storage Device for CIFS

There are two options for BridgeHead HDM to authenticate to DR Series Deduplication Appliance through CIFS.

- 1. <u>DR is joined into an Active Directory Domain</u>: Integrate BridgeHead HDM and DR Series Deduplication Appliance with Active Directory
- a. Ensure the AD user has appropriate ACLs to the DR Series Deduplication Appliance Container share
- b. When creating an object, set the Backup Node of BridgeHead HDM to run with this AD user <Domain\User>
- 2. <u>DR is standalone CIFS server</u>: Make sure this CIFS user has appropriate access permission to the DR Series Deduplication Appliance container share. BridgeHead HDM Backup Node will use this user to authenticate to DR Series Deduplication Appliance share in Workgroup mode.
- a. To set the password for local CIFS administrator on the DR Series Deduplication Appliance, log on to the DR using SSH.
 - i. Log on with username Administrator and password St0r@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 BridgeHead Healthcare Data Management service account to use the CIFS administrator account.



A.2 Create a Storage Device for NFS

For NFS backup using the BridgeHead Healthcare Data Management, 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 Deduplication Appliance NFS share onto the NFS share directory which backup objects will be written in the BridgeHead Healthcare Data Management environment.
- 2. Verify the NFS share. One way is to try using the Linux command "cat /proc/mounts". The rsize and wsize of the connects in the command output should be 512K.

