### Quest

### Setting Up Quest<sup>®</sup> QoreStor<sup>™</sup> as a CIFS/NFS Target on Dell EMC<sup>™</sup> Networker<sup>®</sup>

### **Technical White Paper**

Quest Engineering August 2018

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#### Legend

CAUTION: A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

IMPORTANT, NOTE, TIP, MOBILE, or VIDEO: An information icon indicates supporting information.

Setting Up Quest® QoreStor™ as a CIFS/NFS Target on Dell EMC<sup>™</sup> Networker® Updated – August 31, 2018

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### Executive Summary

This paper provides information about how to set up QoreStor as a backup target for **Dell EMC<sup>™</sup> Networker**<sup>®</sup>.

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

### http://support.quest.com/QoreStor

For more information about Networker, refer to the Networker documentation at:

### https://community.emc.com/docs/DOC-49315

**NOTE:** The screenshots used in this document may vary slightly, depending on the version of QoreStor or Networker software you are using.

### Revisions

Date	Description
January 2014	Initial release
November 2016	Updated the guide with new DR-4.0 GUI screens
October 2017	Updated with new QoreStor GUI with rebranding Changes(4.0.3)
August 2018	Added screens from QoreStor 5.0

## Installing and configuring QoreStor

- 1. Before installing QoreStor, refer to the *QoreStor Interoperability Guide* to ensure your system(s) meet the installation requirements.
- 2. To install QoreStor on your system(s), follow the procedures documented in the *QoreStor Installation Guide*.

Using a supported web browser (refer to *QoreStor Interoperability Guide* for a list of supported browsers), connect to the QoreStor administrative console via https, using the host IP address/FQDN and port 5233 (https://<hostname:5233>). Log in with the username admin and password stor@ge! (The "0" in the password is the numeral zero)

QoreStor × +				- 5
→ C û Q, https://myqorestorhost:5233		Q, Search	_	M/ 60
	0			
	Quest			
	QoreStor			
	Username			
	Password			
	Sign in			
	© 2018 Quest Software Inc. All Rights Reserved.			

 By default, QoreStor has a user with RDA Role named backup\_user and password "St0r@ge!". Refer to the *QoreStor User Guide* for information on changing user accounts. Administrator user also has the same password St0r@ge!.

Setting Up Quest® QoreStor™ as a CIFS/NFS Target on Dell EMC™ Networker® -

# Creating and configuring CIFS/NFS target container(s) for Networker

## Creating the network share container for Networker use

1. Under the Storage Group select Add Container.

	tem State: Operational Mode stName: os-demo tem ID: 4232F006789CC08E413356A5E29E58C8		NUMBER OF CONTA	UNERS NU	MBER OF STORAGE GROUPS	DICTIONARY TYPE
			TOTAL FILES NUMBER OF CONTAINERS NUMBER OF STORAGE		1	CLOUD OPTIMIZED
System ID: 4232F0 Version: 5.0,0.1						
						Add Storage Grou

2. In the Access Protocol field, select NFS or CIFS as appropriate. Select Marker Type as Networker and click Next (Networker supports both CIFS and NFS protocols.)

Add container		X
Marker Type	12	
Networker		÷
Access Protocols		
NFS × CIFS ×		

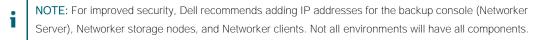
Setting Up Quest® QoreStor™ as a CIFS/NFS Target on Dell EMC<sup>™</sup> Networker® -Creating and configuring CIFS/NFS target container(s) for Networker 3. Fill in backup container information for NFS or CIFS as appropriate, then click Next.

×	Add container	×
	2 2	
	<b>CIFS</b> Options	
	CIFS Client Access:	
	Open (allow all clients)	
_	Create Client Access List	
*	IP List	
		Add
Add	1. Contraction of the second sec	
	•	Add container CIFS Options CIFS Client Access:

4. Confirm the settings and click Finish.

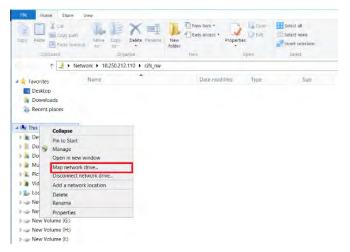
Conta	ainer summary	
lame:	cifs_nw	
rotocol:	NAS	
larker:	Networker	
Conne	ection summary	
rotocol NFS:		
ptions:	Read Write	
oot Mapping:	root	
ccess:	*	
rotocol CIFS	c	
ccess:	*	
Cancel P	Prev Finish	
ccess:	*	

5. Confirm that the container is added successfully.



## Configuring the Networker storage node CIFS & NFS

- 1. Log on to the storage node and click Start > Computer.
- 2. Righty click Computer then click Map network drive.



 In the Map Network Drive window, in the Folder field, enter the path to the container on the QoreStor system.

🔘 🤏 Ma	ap Network Drive
	network folder would you like to map? he drive letter for the connection and the folder that you want to connect to:
Drive: Folder:	Z:  V (\10.250.212.110\cifs_nw Browse
	Example: \\server\share  Reconnect at sign-in  Connect using different credentials  Connect to a Web site that you can use to store your documents and pictures.
	Finish Cancel

4. Select Reconnect at sign-in.

When prompted, enter the CIFS credential to authenticate on the Active Directory domain. The QoreStor container is now mounted to your backup server.

5. If Client Direct is used, make sure all the clients can access the same QoreStor container share using this path. Otherwise, separate Client Direct Paths must be entered with the actual paths that clients use to access the QoreStor container share (please refer to step 10 in the next section Set up Networker).

## Configuring Networker to use the newly created network share

- 1. Open the Networker Management Console (NMC).
- Click Enterprise, select the storage node for which the QoreStor share will be configured as a backup device, right-click on Enterprise >> New >> Host.

Enterpris-	4 ) K	- line
- K dma-	New	Host Ctrl-N
	Paste Ctri-V	Folder Ctrl+Alt-N
	Refresh F5	dma-server1.testad.ocarina.local

3. Add the Host Name and click Next.

Add New Host	X
Host new host and add it to the Enterprise Hierarchy	
1 dma-server1.testad.ocarina.local	_
< Back Next > Ca	ncel
	Host new host and add it to the Enterprise Hierarchy 1 dma-server1.testad.ocarina.local

4. Select Networker and click Next.

😺 Add Ne	w Host	X
Select Host Type Select type of the new host		
NetWorker     Backup and recover for the department and enterprise		
O Avamar Deduplication backup and recover for the enterprise	-	
O DataDomain Data Domain System		
	< Back Next > C	ancel

5. Click Finish.

	Add New Host
Manage N Configure C	etWorker
Host Type:	NetWorker
Description:	Backup and recover for the department and enterprise
Vendor Name:	EMC Corporation
Features Capture Gather F	Events Leporting Data
	< Back Finish Cancel

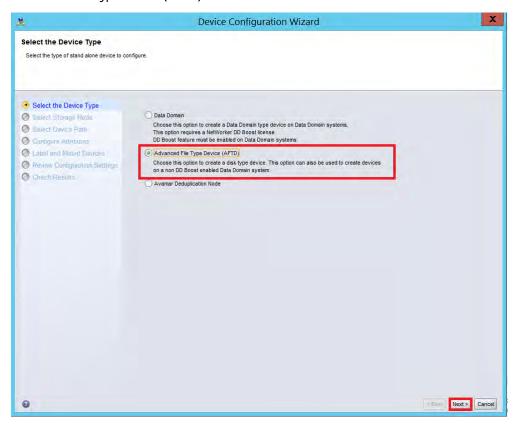
6. Right-click and select the newly created Networker application and click Launch Application.

Ŵ		EMC NetWorker Management Console V8.2.1.0 - dma-server1.testad.ocarina.local
💽 Enterprise 🧧 Reports 📑	Setup	
	Help	
0×0× ) ×		
Enterprise     Enterprise     Launch Application     Properties     Delete     Copy     Move	NetWorker Server: dma-server1.testad.ocarina.lo Ctrl-AR-L dma-server1.testad.ocarina.local Ctrl-O Delete 0 session(s) Ctrl-C 0 session(s) ctrl-C session(s) crl-C session(s) crl-Ammistration	a
Refresh	F5	

7. In the Devices window, right-click Device in the left panel and click New Device Wizard.



8. Select Advanced File Type Device (AFTD).



13

9. In the next dialog box, select Device storage is remote from this Storage Node, type in the network path of the QoreStor container share location (if name resolution works, the hostname or FQDN can be used in the server portion of the network path). In the Authentication section, type the CIFS credentials to access the QoreStor share. Click Next.

Select Storage Node Select the storage node to place this AFT and password to browse the storage an		be configured is remote to that storage node, enter a network path to the storage. Supply or manually enter the paths.	i username
Select the Device Type Select Storage Node Select Device Path	Storage Node:	dma-server1 lestad ocarina local	J
Select Device Path     Configure Attributes     Label and Mount Devices     Review Configuration Settings     Check Resolute			1
		nual prage node or network path iter local or remote device paths	
	Authentication Username Username:	can also be entered as username uid if specifying NFS server and export name localhost administrator	2
	Password:		
			3

**NOTE:** For NFS protocol, Device storage is remote from this Storage Node, type in the network path of the QoreStor container share location.

i

10. Mount QoreStor in the Linux machine and provide the mount path in the **Network Path** field. In the **Authentication** section, type the Linux Login credentials to access to QoreStor share. Click **Next**.

A.	Device Configuration Wizard	x
	TD on. If the storage to be configured is remote to that storage node, enter a network path to the storage. Supply a username id select device paths, or manually enter the paths.	
Select the Device Type Select Storage Node Select Device Path Configure Atmontes Listel and Mount Devices Review Configuration Settings	Storage Node: dma-server-mel6   Comparison from this Storage Rode   Specify CFS path or NFS path can be specified either as <nfs server="">/<export> or as a Unity path Network Path: Imrofints</export></nfs>	
Check Results	Browse or Manual Browse storage node or network path Manually enter local or remote device paths	
	Authentication           Image: Constraint of the entered as usernameruid if specifying NFS server and export name           Username:         root           Password:         •••••••	
Q		Back Next > Cancel

11. Click New Folder, type an appropriate folder name, enable the folder, and click Next.

R.	Device Configuration Wizard	X
Select the Device Path Select one or more device paths from th	is network path to create devices on.	
<ul> <li>Select the Device Type</li> <li>Select Storage Node</li> <li>Select Device Path</li> <li>Comgure Attrouves</li> <li>Label and Mount Davcas</li> <li>Review Configuration Sattings</li> <li>Check Results</li> </ul>	2	Remove Folder
	Selected Device Paths (110 250 212, 110/cifs_mvi/cifs	
0		< Back Next > Cancel

Setting Up Quest® QoreStor™ as a CIFS/NFS Target on Dell EMC<sup>™</sup> Networker® -Creating and configuring CIFS/NFS target container(s) for Networker 12. Set the session attributes according to the Networker administration documentation and click **Next**. If the **Client Direct** feature will be used, different device path(s) that clients use to access the QoreStor container share can be entered into the Client Direct Paths. If all of the clients are able to access the QoreStor container share using the direct path, there is no need to enter extra client direct paths.

K.		Device Configura	tion Wizard		2
Configure Device Attributes Fill in any device attributes. Give each de CIFS or Unix Automounter paths.	vice a unique name. If clients i	will backup directly to this store	age (Client Direct), then enter thos	e access paths in the for	mof
<ul> <li>Select the Device Type</li> <li>Select Storage Node</li> <li>Select Device Path</li> <li>Configure Attributes</li> <li>Label and Mount Devices</li> <li>Review Configuration Settings</li> <li>Check Results</li> </ul>	NetWorker D., V Com Cits	ment    Device Path W10,250,212,110ka	Clent Direct Paths	<b>Target</b>	Max Session
	NetWorker Device Name: Comment: Device Path: Client Direct Paths:	cifs	ifs	1	
	Target Sessions: Max Sessions:			4 + +	
0					2 < Back, Next > Cance

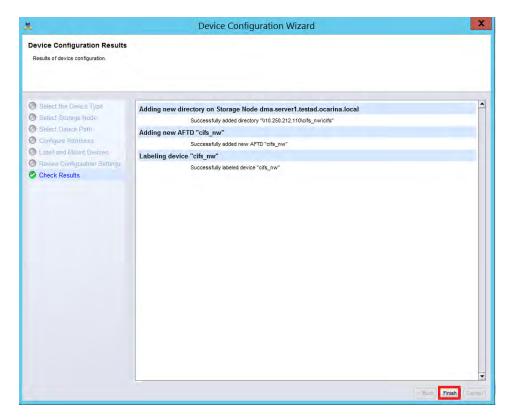
13. The new Networker device should have Pool Type set to Backup. Click Next.

Select Storage Node     cifs       Select Device Path     configure Attributes		ool Type Disk Pool ackup Default		_
Select Storage Note Select Device Path Configure Attributes	V 19	actup Delauli		
Configure Attributes				
Label and Mount Devices				
Review Configuration Settings				
Check Results				
Label and	Mount device after creation			
01	he Label and Mount device operation may t	take an extended amount of time	e	
Poo	I Туре			
۹	Backup			
0	Backup Clone			
Poo	r .			
De	fault	-		
			2.4	

14. Review the configuration and click Configure.

	Device Configuration Wizard	X
Review the Device Configurat Review the device configuration summary	tion Settings y. To modify the configuration, click Back. To accept and create the configuration, click Configure.	
<ul> <li>Select the Device Type</li> <li>Select Storage Node</li> <li>Select Device Path</li> <li>Configure Attributes</li> <li>Label and Mount Devices</li> <li>Review Configuration Settings</li> <li>Clineck Results</li> </ul>	Adding new directory on Storage Node dma-server1.testad.ocarina.local         New Directory:       \two 250.212.110/cits_nw/cits         Adding new AFTD "cits"         AFTD Name:       cits         Device Access Information:       \two 250.212.110/cits_nw/cits         Target Sessions:       4         Max Sessions:       32         Remote User:       localostadministrator         Password:       ************************************	×
	Labeling device "cifs" Device Name: cifs Pool Name: Defauit	

15. Check the results and click Finish.



16. Review the Device configuration settings and click Configure.

6 H	Device Configuration Wizard	X
Review the Device Configurati Review the device configuration summary	ion Settings . To modify the configuration, click Back. To accept and create the configuration, click Configure.	
<ul> <li>Select the Device Type</li> <li>Select Storage Node</li> <li>Select Device Path</li> <li>Configure Attributes</li> <li>Label and Mount Devices</li> <li>Review Configuration Settings</li> <li>Clineck Results</li> </ul>	Adding new directory on Storage Node dma-server1.testad.ocarina.local New Directory: \\10.250.212.110\loits_nw\cits Adding new AFTD "cits" ATTO Name: cits Device Access Information: \\10.250.212.110\loits_nw\cits Target Sessions: 4 Max Sessions: 32 Remote User: locahostadministrator Pessword: ******	
	Labeling device "cifs" Device Name: cifa Pool Name: Defauit	
	< Ba	ck Configure Cancel

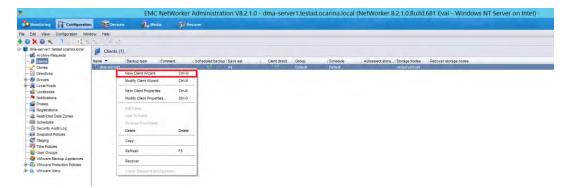
17. On the Configuration tab, Right click on Groups and select New.

£		EMC	NetWork	ker Administ	ration V8.2.1.0	- dma-server1.testad.ocarina.local (NetWorker 8.2.1.0.Build.681 Eval - Windows NT Server on Intel)
Monitoring Configuration	Devites	🕵 Med		Recover		
File Edit View Configuration Wind						
	- C 2					
dma-server1.testad.ocarina.local	Groups (2)					
- J Clients		Comment	Start time	Autostart	Last start	Schedule
- Ciones	Je cifs_nw		21:00	Disabled	9/29/16 10:31:33	
Directives	5 Default		21:00	Disabled		
term Cirili     term Ciri						

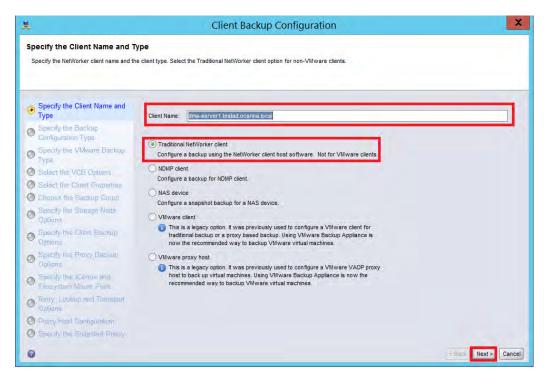
18. Fill the Required details and click OK.

× .		Create G	roup		x
Setup Advance	ba		_		
Identity		2	Clones		
Name:	cifs_nw		Ciones:		
Comment:			Clone mode:	Start on group completion	-
			Clone pool:	Default Clone	*
Setup					
Start time:	21:00		Output		
Autostart	Disabled	-	Printer:		
Status			Snapshots		
Lest start.	-		Snapshot:	-	
Last start.			Snapshot Policy	1-1-Day-All	
Lasi enu.			Snapshot Pool:	Default	•
			Shapenor Poor	Delava	
		3			

19. On the Configuration tab, right click on Clients and Select New Client Wizard.



20. Specify the Client Name and click Next.



21. Select the Backup Application Type and click Next.

		and the second se	
Specify the Client Name and Type	Client Operating System:	Windows Server 2012 R2 6.3	
Specify the Backup	NetWorker Client Version:	8.2.1.0.Build.681	
Specify the Client Backup	Available Ap Ves	ort NetWorker Snapshot Management	
Options	a case of the second se		
Select the Client Properties Choose the Backup Group			
Specify the Snapshot Policy			
Specify the Storage Node Options			
Backup Configuration Summary	Enable NetWorker Shar	oshot Management on the selected application	
Check Résults			

22. In Specify the Client Backup Options, define the following settings as follows.

- a Deduplication should be set as None
- b Target Pool should be set as the pool that has the QoreStor device included.

**Client Direct** can be enabled if the client is directly backing up data to a preferred DR, thus bypassing the storage node. For Client Direct to work, the QoreStor device must have at least one device path that the client can use to directly access the QoreStor container share.

¥.	Client Backup Configuration	×
the backups to a storage device. Select the	ions lient Direct option, which is supported only for Data Domain and AFTD, to bypass the NetWorker storage node and direct he Deduplication option for data deduplication if a Data Domain or Avamar storage server is configured with the rt option enables failed scheduled backups to restart from the point of interruption.	
<ul> <li>Specify the Client Name and Type</li> <li>Specify the Backup Configuration Type</li> <li>Specify the Client Backup Options</li> <li>Select Friles in Backup</li> <li>Select the Client Properties</li> <li>Chease the Backup Group</li> <li>Specify the Storage Node Options</li> <li>Backup Configuration</li> </ul>	Block Based Backup:  Client Direct:  Parallel save streams per save set:  Target Pool: Default  Deduplication  Data Domain backup  Avamar backup  Avamar backup	t t
Check Results	Checkpoint Enabled Checkpoint Enabled:	-
0	< Back	Next > Cance

23. Select the Backup folder and click Next.

	Client Backup Configuration	
Select the Filesystem Objects Select the client filesystem objects to bac		
Specify the Client Name and Type	By default, all the file system objects are backed up. Clear the checkbox for an object that should not be included in the backup. C→ U™ C	1
Specify the Backup Configuration Type	B SRecycle.Bin	
Specify the Client Backup Options	⊕ ─ ₩ 🔁 Config.Msi ⊕ ─ ₩ 🔁 cygwin64	
Select Files to Backup	terender for the second secon	
Select the Client Properties	⊕ ─ ₩ 📁 Documents and Settings ⊕ ─ ₩ 🗇 IBM	2
Choose the Backup Group	⊕-♥ 0 IBM2	
Specify the Snapshet Policy	⊕-₩	
Specify the Storage Node Options	B - ₩ 0 nw812_win_x84 B - ₩ 0 nw821_win_x64	
Bachup Configuration		
Summary	B-B pwres2	
Check Results	⊕ ─ ♥   PerfLogs ⊕ ─ ♥   Porgram Files	
	Den Files (x86)	
	⊕ ─ ♥ 戶 ProgramData ⊕ ─ ♥ 戶 rda files	
0		< Back Next > Cano

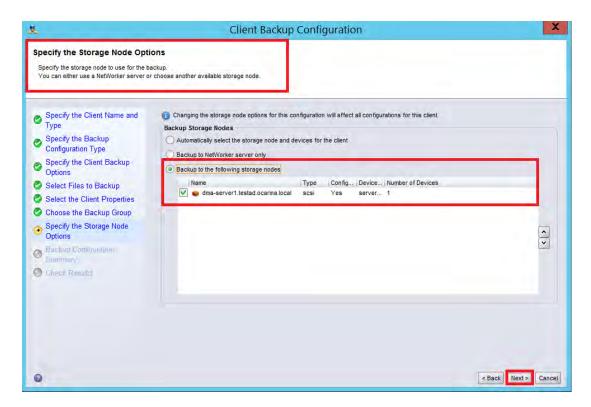
24. Select the Networker Client Properties and click Next.

Specify the Client Name and	Browse policy: Maintain backup entries in the online file index	Month	+
Type Specify the Backup Configuration Type	Retention policy: Maintain backup entries in the save set index	Year	-+
Specify the Client Backup Options	Backup schedule:	Default	•
Select Files to Backup	Client comment:		
Select the Client Properties			
Choose the Backup Group	Remote access:		
Specify the Snaoshot Policy			
Specify the Storage Node Options			
Backup Configuration Summary			
Check Results			

25. Specify the Networker Backup Group and click Next.

ж.	Clier	nt Backup	Configuration	ii	X
Specify the NetWorker Backu Select an existing NetWorker backup gro	and a second	(up, and specify	the scheduled backup sta	irt time.	
<ul> <li>Specify the Client Name and Type</li> <li>Specify the Backup Configuration Type</li> <li>Specify the Client Backup Options</li> <li>Select Files to Backup</li> <li>Select the Client Properties</li> <li>Sheathy the Snapshot Folicy</li> <li>Specify the Snapshot Folicy</li> <li>Specify the Storage Node Options</li> <li>Specify the Storage Node Options</li> <li>Specify Configuration Summary</li> <li>Creeck Results</li> </ul>	Add to an existing group  Add to an existing group  Add to an existing group  Bore anew group  Create a new group  Create a n	21:00	21:00  21:00		
0					< Back Next; Cancel

26. Specify the Storage Node Options and click Next.



27. Verify the summary and click Create.

Backup Configuration Summa			
Check the results for the client configurat Ensure that you have properly configured The backup fails if all NetWorker resource	d all other NetWorker resources, such as devices be	ing used, permission information in User Groups, and so	9 01.
Specify the Client Name and Type	Adding new client "dma-server1.test	tad.ocarina.local"	
Specify the Backup Configuration Type	Save set: Name: Backup Type:	C:\data dma-server1.testad.ocarina.local Filesystem	
Specify the Client Backup Options	Deduplication: Checkpoint Enabled:	None false Directory	
Select Files to Backup	Checkpoint Granularity: Block Based Backup:	false	
Select the Client Properties	Client Direct:	true	
Choose the Backup Group	Parallel save streams per save set: Pool: Browse Policy:	false Default Month	
Counties the Otomore Made			
Options	Retention Policy:	Year	
Destars Conferences	Schedule: Group:	Default cifs nw	
Summary	Storage Nodes:	dma-server1.testad.ocarina.local	
O Check Results			

28. After completing the Client Backup configuration, expand **Groups** in **Configuration** tab and right-click the appropriate Backup group created, then click **Start**.

X.	E	MC NetWork	er Administrat	ion V8.2.1.	0 - dma-serv	er1.testad	.ocarina.loca	I (NetWorker &	.2.1.0.Build	.681 Eval - Wind
S Monitoring	a 💕 Devices 🛛 👰	Media 🗗	Recover							
File Edit View Configuration Win	dow Help									
+OXON 1 DKA	SOM:									
dma-server1.testad.ocarina.local     dma-server1.testad.ocarina.local     dma-server1.testad.ocarina.local	cifs_nw (1)									
- JE Clents-	Name - Backup type	Comment.	Scheduled backup	Save set	Clert drect	Group	Schedule	Autoselect stora	Storage Nodes	Recover storage nodes
Ciones	J dma-server1 Filesystem		~	C\data	¥	cifs_nw	Default		nsrserverhost	
Directives	The second second									
Groups										
Defe New Client Wizard	Ctri+W									
Bos Drasartes	Ctri-O									
E Local Ho										
	Ctri-N									
Probes	Delete									
Registra Copy										
- & Restricte Copy with Clients										
Schedul Security Start										
- Ed Snanchr										
Staging Refresh	F5									
Time Policies										
User Groups										
- VMware Backup Applances										
Vilware Protection Policies     Wilware View										
T. 16 Answere Astw	1									

29. Monitor the job status in the **Monitoring** tab.

File Edt View Maniforma	Wintow Hell		_			-
IOXON DR					🐮 cifs_nw Details	
Groups and Policies					Start Time of activities to 31:33 Per	00
	Vame  Last Run		N Complete N			
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	acteur.		*		Wrating to Run	
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					Cusendy Running:	
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All Seasions						00
					Description         State State         Lived Type         Date Type         Description         State Type         Description         State Type         Description         State Type         Description         State Type         St	
- Al Sessions - Save	Constants	r Sensions	siins.	trowse Sassions	Fand	
Devices					Clent Name - Save Set Level Type Start Time Duration Messages	00
Status Device -	Storage No. Library	Volume	Post	Message		
NTape0	data-serve STK@3.4.1		TW_ISCSI	ejected		
NTapet	dtsa-serve STK@3.4.1		tw_acti	ejected		
Willape2	dma-serve_STK@3.4.1		riw_ace	ejected		
NITapeS     NITape4	dna-serve STK@3.4.1 dna-serve STK@3.4.1		tw_sets	ejected		
Allaps5	dna-serve. STK03.4.1 dna-serve. STK03.4.1		tive acts	ejected.		
Allapso hitapes	dna-serve STK@34.1		thw_ace	ejected	OK	
W NiTapeT	dna-serve S7K(0) 4 1		THE BOS	elected		
NTapes	dna-serveSTK@2.4.1		TW_BOS	elected		
WTapes	dra-serve. STK03.4.1		TW_BOSI	ejected		
	des serve	data harmout heat		special and the fact data many		

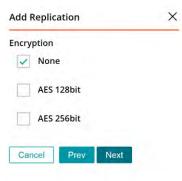
## Setting up QoreStor system replication and restore from the replication target

### Creating a replication relationship between two QoreStor systems

1. Create a Source container on the source QoreStor system.

Replication	System Configuration Diag	nostics Alerts Users	Add Replication	×
STATUS	CURRENT SAVINGS 75.86 %	CAPACITY L 132.69 G	Source Container:	
FILES	NUMBER OF CONTAINERS 6	NUMBER OF STOR/ 3	Remote	
		- 1 - 1	Select Local Container	
			rdnfs1	
	STATE	AVERAGE THROUGHPUT	rdnfs2 rdnfs3	
	insync	0 KiB/s	rdnfs4	_
			cifs_nw	

2. Select the Encryption Type for the Source Container and click Next.



3. Select the remote container as previously created Target container in the replication wizard.

a has a provide to	-
Replica Container	
Local	
Remote	
Username	
administrator	
Password	
Remote Machine	
10.230.48.125	
Retrieve Containers	
Select Remote Container	

4. Verify the Summary and click Finish.

Sun	nmary				
	So	ource container			
sou	rce:	local			
RA Con	tainer:	cifs_nw			
1		Encryption			
Enc	ryption:	none			
	Re	plica container			
Rep	lica Locatio	on: remote			
Con	tainer;	target			
Use	rname:	administrator			
Pas	sword:	*******			
Mad	hine:	10.230.48.125			

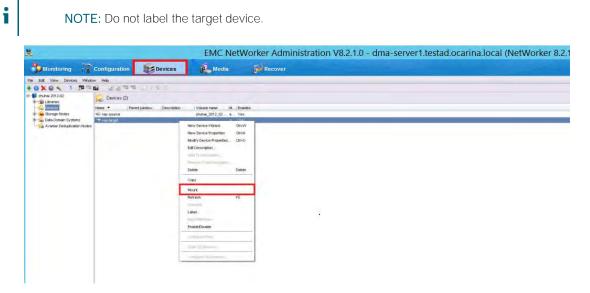
5. Check Replication is added successfully and Confirm the Replication details

eplications						
Operating System: System State:	CentOS Linux release 7.3.1611 (Core) Operational Mode	CLEANER STATUS DONE	CURRENT SAVINGS 75.86 %	CAPACITY USED 132.69 GB	PHVSICAL CAPAC 275.00 GB	TY
HostName: System ID:	networker-qs-01 423109A3E1736B88F26201304646F723	TOTAL FILES	NUMBER OF CONTAINER	S NUMBER OF STORAGE	GROUPS DICTIONARY TY	PE
Version:	5.0.1.105	ž.				
SOURCE	STATUS	REPLICA	STATE	AVERAGE THROUGHPUT	DEDU/F NETWORK SAVINGS	leplication
cifs nw	Online	target	insync	0 KiB/s	0.00%	

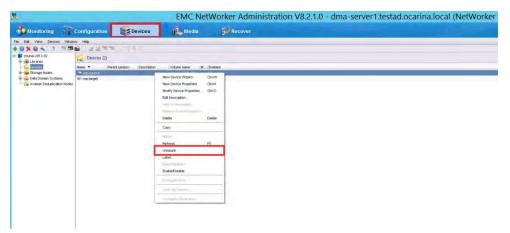
Setting Up Quest® QoreStor™ as a CIFS/NFS Target on Dell EMC™ Networker® -Creating and configuring CIFS/NFS target container(s) for Networker

# Restoring from the replication target container

1. Add the target container onto the Networker storage node. Right-click **Device** > **New Device Properties**, and then enter necessary information for the target device. When complete, mount the device.



2. Unmount the source container.



3. Go to Recover Tab, Right click and Add New Recovery

A		EMC Net	Worker Administration V	8.2.1.0 dma server	1.testad.ocarina.loc	al (NetWorker 8.2.	1.0.Build.681 Eval - V	Vindows NT Server on In	tel)	- 0 0
Settenteres Trentan	abor Devees	A. trea	Receiver							tiners environmente
Plo ESE View Receiver Wind	он мар		1							
Recover Totals () session(s) Server Start Tree: Step 29, 2016 2 46; Configured Recovers.	22 AB									
Statua Name Source	Cleat Destination Cle	d. Pecove	iry list Recover type Commen	05 P	lecover requestor Start Time 🔻	End Time Start	09/H			
_	_									
	Recover Chill 2									
	and clim.									
Dist										
041										
Currently Renning Status Iname • Source	e Glent Destination Cire	et Sat h	ive Duration Recover	Recoveringe V	oune Comment	Device	Size Total Siz	% Complete		Rate (KB)
				and the second						144

4. Fill the appropriate information in the Recovery Hosts and click Next

6		Recover Confi	guration	X
Select the Recovery Hosts Select the source host, the destination ho host. The software that supports the select			urce host and the destination host, then disp	slays the recovery types that are supported by either
Select the Recovery Hasts     Counce the Yatums Information     Tradewin the Recovery     Counce the Recovery Resides	Source Host Name OS: NetWorker version: Earliest backup: Latest backup:	Contraction of the second contract of the second se	Destination Host	
	Available Recovery Try Types of Backups → Block Based Backup ( Block Based Backup ( Block Based Backup ( Net Synaphots Snapshot Management	cloned to tape)	Backups Found in Last Wesk	Number Found 0 0 0 0
0				Unt Cose

5. Select the data set to recover, click Versions to view the Select Versions window, select the data, and click OK.

X.	Reco	ver Configuration		x							
Select the Data to Recover The Browse tab enables you to perform a The Search tab enables you to search fo	a by file selection recovery from a specific date a or file system objects to recover from at a specific perform a save set recovery from a specific dat	nd time. To use this aption, the client file noise: date and time. To use this option, the client file and time. Use this aption when the client file pressivered by the selection bank to following, or	The several hash much create the backets in human index of the source hash much contain the source and the source hash much contain backet on deal of the source hash several to the backet to the source hash set all also its 196/tit. Backet Dearbox Come Boothet Source 10, 23, 9 M 0, 8 Source 10, 23, 9 M 0, 8 Source 10, 23, 4 M 0, 8 Source 11, 23, 44, 24 M 0, 8 Source 11, 23, 44, 24 M 0, 9 Source 11, 23, 44, 24 M 0, 9 S	e. ormation. bormation.	Start tile 100-16 11 522 100-16 11 522 32 Verwell of the evaluate Name Start, Model The Start, Model The St	AM ensions of the file that y j Beckup Time 104476 1 115 25 AM 104676 1 115 49 AM 104676 1 115 49 AM	Sel ou highlighted in the Selec Wature Des develor 1 brank do dine_server1 brank do dine_server1 brank do dine_server1 brank do	Device Neroll cols target_cols target_cols		ons of the file to record	Stoles On-Set On-Set On-Set
	Recrey Set	The Identify 17/25 AV BE	Star Graps Brown Brown	Cites	0	4 00	Charge Stowar	Tine ( Saarth	ALTIME C	anesi	

6. Select the recovery options, choose **Original path** or enter a **New Destination Path** to which to recover data, and click **Next**.

ŧ.	Recover Configuration
Select the Recovery Options Specify the original path or a new path on	the destination host for the recovered data. You can also specify how to handle duplicate files on the destination host and other advanced recovery options.
<ul> <li>Select the Recovery Hosts</li> <li>Select the Data to Recover</li> <li>Select the Recovery Options</li> <li>Obtain the Volume Information</li> </ul>	File Path for Recovery  Original path  New destination path  E-RESTORE
Cottain the Volume Mornandri     Partorn the Recovery     Check the Recovery Results	Duplicate File Options O Rename the recovered file D to not recover the file O overwrife the existing file
	Advanced Options
0	< Back Next > Clos

7. Allow the recovery wizard to select the required volumes and click Next.

		Reco	ver Config	juration	X
Obtain the Volume Informatio You can allow the Recovery Wizard to s The Recovery Wizard performs the reco Use the Storage node field to select a st	select the required volume overy from the first storage	e node in the Recover st	orage node attrib		
<ul> <li>Select the Recovery Hosts</li> <li>Select the Data to Recover</li> <li>Select the Recovery Options</li> <li>Obtain the Volume Information</li> </ul>	Allow NetWorker to		umes for recovery	/ (Recommended) lumes of cloned data if available	
O Perform the Recovery	Volume 🔻	Device or Location	Media Type	Status	
Chack the Recovery Results	dma_server1.tes		adv_file	On-ine	
		e volumes for recovery ate volumes of cloned da		-	
	Pool: Atternate Vol				
		umes   Device or Locati	on   Media Type	Status	
	Alternate Vol		on   Media Type	Status	
	Atternate Vol Volume 💌		on   Media Type	-	

8. Enter a Recover name, and click Run Recovery.

K.		Recove	er Configuration			X
Perform the Recovery You can start the recover now or schedu When you configure a hard stop time, the				Recovery Wizard performs	the recovery operation.	
	Identity			Recovery Start Time		
Select the Recovery Hosts Select the Data to Recover	Recover name:	restore-nw		Start recovery now		
Select the Recovery Options	Comment:			start at		
Obtain the Volume Information						
Perform the Recovery     Check the Recovery Results				Specify a hard stop time:		
	Summary					
	Adding new	recover				-
	Sourc Destin Recov Volum Recov	e Client Name: e Client Operating System: vation Client Mame: vation Client Operating System: er Type: e information: ver List:	dma-server1.testad.ocarina.local Windows NT Server on Intel Mma-server1.testad.ocarina.local Windows NT Server on Intel Filesystem Use the above volumes for recovery oct 6, 2016 1:15:35 AM GMT-0700 C: Oct 6, 2016 1:15:35 AM GMT-0700 C: Oct 6, 2016 1:17:25 AM GMT-0700 C:			
		ver File to:	E:\RESTORE Rename the recovered file			
	Dupic	ate file option:	Remaine me recovered file			•
0				<	Back Run Recovery	Close

9. Check the Recovery Results.

		Recover Configuration					
heck the Recovery Results							
Monitor the progress of the recovery ope window and select Open Recover. Selec		se this window, the recovery operation continues. To display stop the recovery operation.	this page again, right-click the r	ecovery configurati	on in the Recover		
Select the Recovery Hosts	Recover Name: res		Size:	2507 MB	79%		
Select the Data to Recover	Source Client: dr	na-server1.testad.ocarina.local	Completed:	2507 MB	Cancel Recove		
Select the Recovery Options	Start time: Oc	ct 6, 2016 10:38:07 PM					
Obtain the Volume Information	Duration: 00	0:00:41					
Perform the Recovery	Drives: tar	rget_cifs					
Check the Recovery Results	Volumes used: dm	na_server1.testad.ocarina.local.004					
	Recovery Log				Export Log F		
	E:NESTOREICNWU_8.2.1/nw821_win_x64\sd_products.res E:NESTOREICNWU_8.2.1/nw821_win_x64\support/nsrmail.exe						
	E:RESTOREIC/NW_8.2.1/nw821_win_x64\win_x64\support\nsrperf.exe						
	E:\RESTORE\C\WW_8.2.1\nw821_win_x64\win_x64\support\nsrperf.ini E:\RESTORE\C\WW_8.2.1\nw821_win_x64\win_x64\support\perfmon.h						
	E:\RESTORE\C\\W_8.2.1\nw821_win_x64\support\rpcinfo.exe						
	E:\RESTORE\C\WW_8.2.1\nw821_win_x64\win_x64\support\sjielm.exe E:\RESTORE\C\WW_8.2.1\nw821_win_x64\win_x64\support\sjinq.exe						
		(_8.2.1\nw821_win_x64\win_x64\support\sjimm.exe ( 8.2.1\nw821 win x64\win x64\support\sjirdp.exe					
	E:\RESTORE\C\NW	_8.2.1\nw821_win_x64\win_x64\support\sjirdtag.exe					
		/_8.2.1\nw821_win_x64\win_x64\support\sjirelem.exe /_8.2.1\nw821_win_x64\win_x64\support\sjirjc.exe					
	E:\RESTORE\C\NW	[_8.2.1\nw821_win_x64\win_x64\support\smtpmail.exe					
		/_8.2.1\nw821_win_x64\win_x64\support\ / 8.2.1\nw821 win x64\win x64\					
	E:\RESTORE\C\NW	_8.2.1\nw821_win_x64\					
		/_8.2.1\nw821_win_x64.zip /_8.2.1\nw821_win_x86.zip					
	E:\RESTORE\C\WW	/_8.2.1\					
		) from NSR server `dma-server1.testad.ocarina.local'					
	Recover completion	n time: 10/6/2016 10:38:44 PM					
					< Back Finish Close		

## Configuring RapidCIFS with NetWorker

RapidCIFS is a Quest developed protocol that accelerates writes to CIFS shares on the QoreStor system. This is done by only sending unique data to the appliance. This usually causes significant network savings and even sometimes performance boosts.

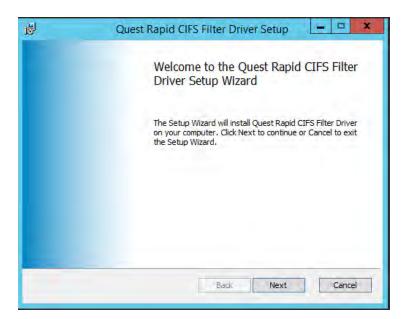
### Windows prerequisites

- The Storage Node OS must be the 64-bit version of Windows 2008 R2, Windows 2012/R2, or Windows 2016.
- **NOTE:** For the accelerator to work properly, the backup traffic must go directly to the QoreStor system. For NetWorker you should install RapidCIFS on the Storage Nodes.

## Installing RapidCIFS on a NetWorker Storage Node

Follow these steps to install RapidCIFS.

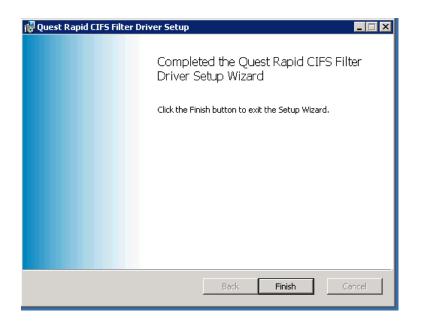
- 1. Download the MSI to the Server/Proxy by doing the following:
  - a Go to support.quest.com/qorestor/ and select your version.
- 2. On the support page for your product, click Software Downloads.
- 3. For the RapidCIFS plugin for your QoreStor version, click the **Download** icon to download the installer package (.msi file).
- 4. Run the MSI and follow the instructions in the installation wizard as shown in the screenshots below. Click **Next** on the first screen.



5. Click Install.

圆	Quest Rapid CIFS Filter Driver Setup	- 🗆 X
Ready to	install Quest Rapid CIFS Filter Driver	Quest
Click Insta installation	all to begin the installation. Click Back to review or change any n settings. Click Cancel to exit the wizard.	y of your
	Back	Cancel

6. Click Finish.



7. Verify that the "rdcifsfd" driver is loaded automatically; this can be checked by using the command fitmc.



### Configuring RapidNFS with NetWorker

### Linux prerequisutes

- The Storage Node OS must be the 64-bit version of CentOS or SUSE.
- The FUSE module should already be installed, as follows:

On NFS Storage Node, run the command below and verify the command output:

# rpm -qa | grep fuse

```
fuse-2.8.3-4.el6.x86_64
gvfs-fuse-1.4.3-15.el6.x86_64
fuse-libs-2.8.3-4.el6.x86_64
```

- The plug-in must be installed on the designated Linux-based Storage Node in the following directory, /usr/openv/lib/.
- **NOTE:** For the accelerator to work properly, the backup traffic must go over NFS directly to the QoreStor system and not pass through a Storage Node. If that is the case, you should install RapidNFS on the Storage Node.

### Installing RapidNFS on a NetWorker Storage node

Follow these steps to install RapidNFS.

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- 1 Download the installation package to the Storage Node using the following steps:
- 2 Go to support.quest.com/qorestor/ and select your version.
- 3 On the support page for your product, click Software Downloads.
- 4 For the RapidNFS plugin for your QoreStor version, click the **Download** icon to download the installer package (.bin.gz file).
- 5 Use WinSCP or a similar utility to copy the package to the client. The plug-in must be installed in the following directory, /usr/openv/lib/.
- 6 On the NFS Storage Node, assuming that the current working directory has the installation package named QuestRapidNFS-4.0.3036.0-centos5.7-x86\_64.bin.gz, run the following commands in order:

```
gunzip ./ QuestRapidNFS-4.0.3036.0-centos5.7-x86_64.bin.gz
```

```
chmod a+x ./QuestRapidNFS-4.0.3036.0-centos5.7-x86_64.bin
```

- 7 Run the installer:
  - ./QuestRapidNFS-4.0.3036.0-centos5.7-x86\_64.bin -install



8 Create a directory on Storage Node:

mkdir /mnt/backup

9 Mount the QoreStor NFS container on the Storage Node with the Networker marker:

```
mount -t rdnfs 4300-26:/containers/backup /mnt/backup -o
marker=networker
```

## Setting up the QoreStor cleaner

The cleaner will run 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 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 QoreStor can be scheduled. The QoreStor cleaner should run at least 40 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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NOTE: Refer to the document Best Practices Guide for QoreStor for guidance on setting up the cleaner.

Duest	QoreStor™ Dashboard Stora	age Groups Replication	System Configuration Diagnostic	s Alerts Users Management Abo	ut admin ~
HostName: System ID: Version:	Operational mode rahchand-c7-qs2 423169A3E1736BBBF26201304646F723 5.0.1.109	TOTAL FILES 166	NUMBER OF CONTAINERS 6	NUMBER OF STORAGE GROUPS	DICTIONARY TYPE STANDARD
			Cleaner Schedule		Upload SSL Certificate
				12	Cancel Submit
ACTION	DAY		STARY TIME	RMD TIME	
⊖ Remove	Monday		13:00	18:00	
⊖ Remove	Tuesday		13:00	18:00	
O Rémove	Wednesday		13:00	18:00	
⊖ Remove	Thursday		13:00	18:00	

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# Monitoring deduplication, compression, and performance

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

**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.



### Monitor the Storage savings, Capacity, system and Throughput graphs

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