

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

Technical White Paper

Quest Engineering

August 2018



© 2018 Quest Software Inc.

ALL RIGHTS RESERVED.

THIS WHITE PAPER IS FOR INFORMATIONAL PURPOSES ONLY, AND MAY CONTAIN TYPOGRAPHICAL ERRORS AND TECHNICAL INACCURACIES. THE CONTENT IS PROVIDED AS IS, WITHOUT EXPRESS OR IMPLIED WARRANTIES OF ANY KIND.

This guide contains proprietary information protected by copyright. The software described in this guide is furnished under a software license or nondisclosure agreement. This software may be used or copied only in accordance with the terms of the applicable agreement. No part of this guide may be reproduced or transmitted in any form or by any means, electronic or **mechanical, including photocopying and recording for any purpose other than the purchaser's personal use without the written permission of Quest Software Inc.**

The information in this document is provided in connection with Quest Software products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Quest Software products. EXCEPT AS SET FORTH IN THE TERMS AND CONDITIONS AS SPECIFIED IN THE LICENSE AGREEMENT FOR THIS PRODUCT, QUEST SOFTWARE ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL QUEST SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF QUEST SOFTWARE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Quest Software makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Quest Software does not make any commitment to update the information contained in this document.

If you have any questions regarding your potential use of this material, contact:

Quest Software Inc.

Attn: LEGAL Dept

4 Polaris Way

Aliso Viejo, CA 92656

Refer to our Web site (<https://www.quest.com>) for regional and international office information.


Patents

Quest Software is proud of our advanced technology. Patents and pending patents may apply to this product. For the most current information about applicable patents for this product, please visit our website at <https://www.quest.com/legal>.

Trademarks

Quest, the Quest logo, and Join the Innovation are trademarks and registered trademarks of Quest Software Inc. For a complete list of Quest marks, visit <https://www.quest.com/legal/trademark-information.aspx>. Dell, EMC, DellEMC, Networker and other trademarks are trademarks of Dell Inc. or its subsidiaries. Microsoft®, Windows®, Windows Server®, Internet Explorer®, MS-DOS®, Windows Vista® and Active Directory® are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. Red Hat® and Red Hat® Enterprise Linux® are registered trademarks of Red Hat, Inc. in the United States and/or other countries. Novell® and SUSE® are registered trademarks of Novell Inc. in the United States and other countries. Zmanda is a trademark of Zmanda Incorporated in the USA. All other trademarks and registered trademarks are property of their respective owners.

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™ Networker®

Updated – August 31, 2018

Contents

Installing and configuring QoreStor	6
Creating and configuring CIFS/NFS target container(s) for NetWorker	7
Creating the network share container for NetWorker use	7
Configuring the NetWorker storage node CIFS & NFS	9
Configuring NetWorker to use the newly created network share	10
Setting up QoreStor system replication and restore from the replication target	25
Creating a replication relationship between two QoreStor systems.....	25
Restoring from the replication target container	27
Configuring RapidCIFS with NetWorker.....	31
Windows prerequisites	31
Installing RapidCIFS on a NetWorker Storage Node	31
Configuring RapidNFS with NetWorker	33
Linux prerequisites	33
Installing RapidNFS on a NetWorker Storage node.....	34
Setting up the QoreStor cleaner	35
Monitoring deduplication, compression, and performance	36

Executive Summary

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

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.

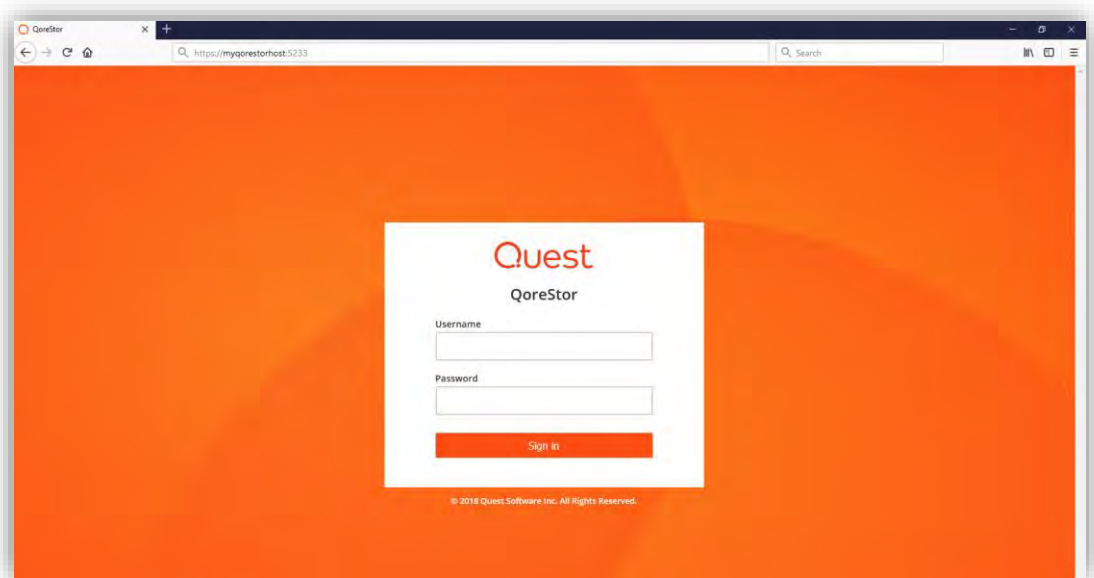
Revisions

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 **St0r@ge!** (The “0” in the password is the numeral zero)

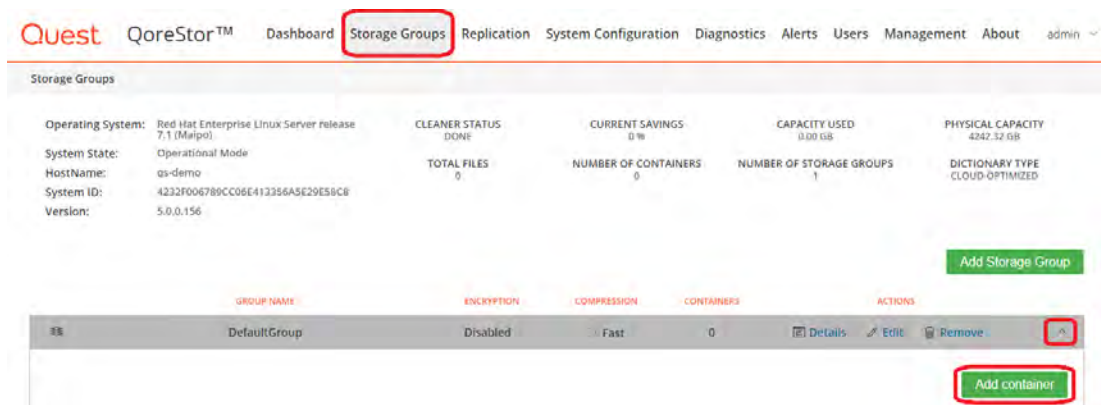


3. By default, QoreStor has a user with RDA Role named **backup_user** and password “St0r@ge!”. Refer to the *QoreStor User Guide* for information on changing user accounts. Administrator user also has the same password **St0r@ge!**.

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**.



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

Marker Type

Networker

Access Protocols

NFS x CIFS x

Cancel

Prev

Next

3. Fill in backup container information for **NFS** or **CIFS** as appropriate, then click **Next**.

Add container [X]

NFS Options

Access:

- ☒ Read Write Access
- ☐ Read Only Access

Map Root To

Root

NFS Client Access:

- ☒ Open (allow all clients)
- ☐ Create Client Access List

IP List

Add

Add container [X]

CIFS Options

CIFS Client Access:

- ☒ Open (allow all clients)
- ☐ Create Client Access List

IP List

Add

Cancel Prev Next

4. Confirm the settings and click **Finish**.

Add container [X]

Container summary

Name: cifs_nw

Protocol: NAS

Marker: Networker

Connection summary

Protocol NFS:

Options: Read Write

Root Mapping: root

Access: *

Protocol CIFS:

Access: *

Cancel Prev Finish

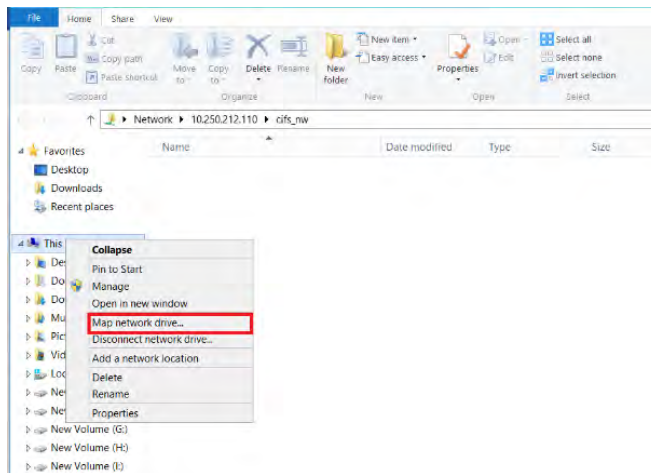
5. Confirm that the container is added successfully.



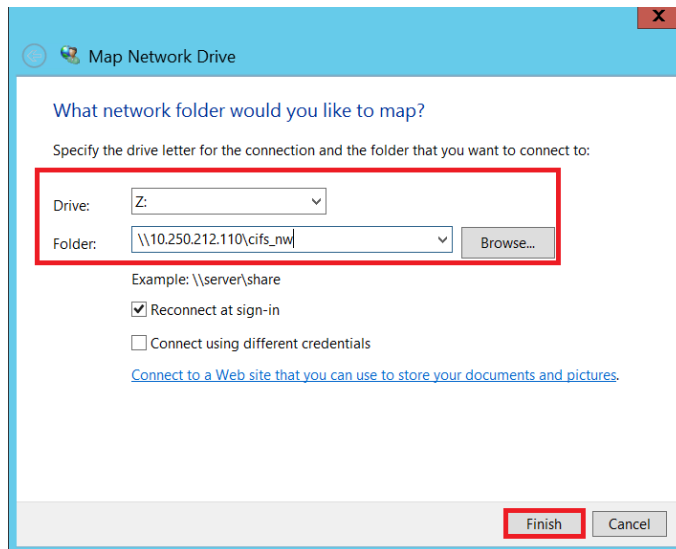
NOTE: For improved security, Dell recommends adding IP addresses for the backup console (Networker Server), Networker storage nodes, and Networker clients. Not all environments will have all components.

Configuring the Networker storage node CIFS & NFS

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



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



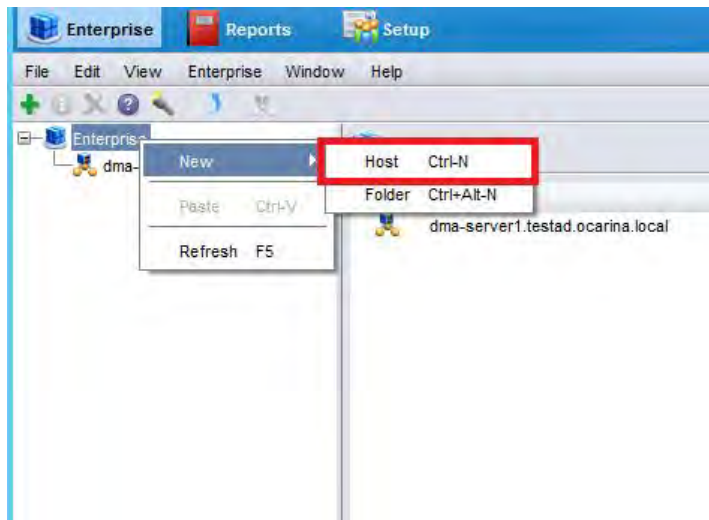
4. Select **Reconnect** at sign-in.

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

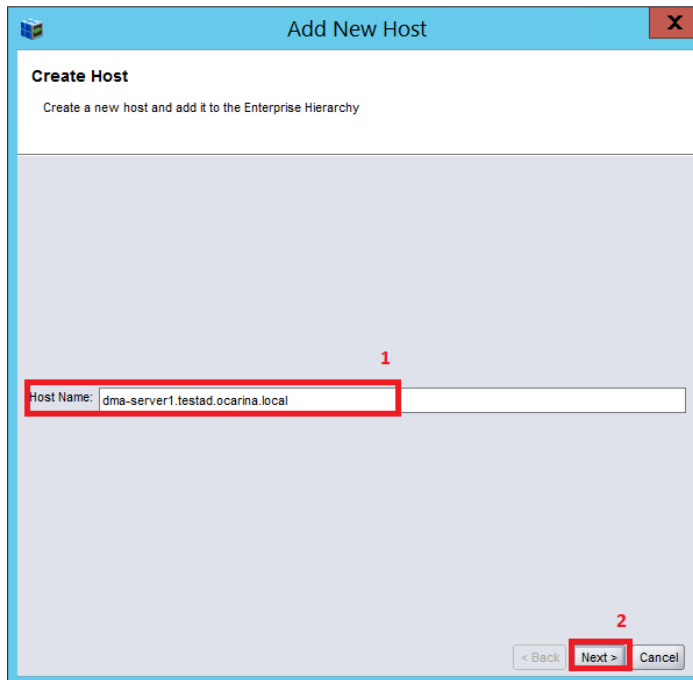
5. If **Client Direct** is used, make sure all the clients can access the same QoreStor container share using this path. Otherwise, separate **Client Direct Paths** must be entered with the actual paths that clients use to access the QoreStor container share (please refer to step 10 in the next section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

Configuring Networker to use the newly created network share

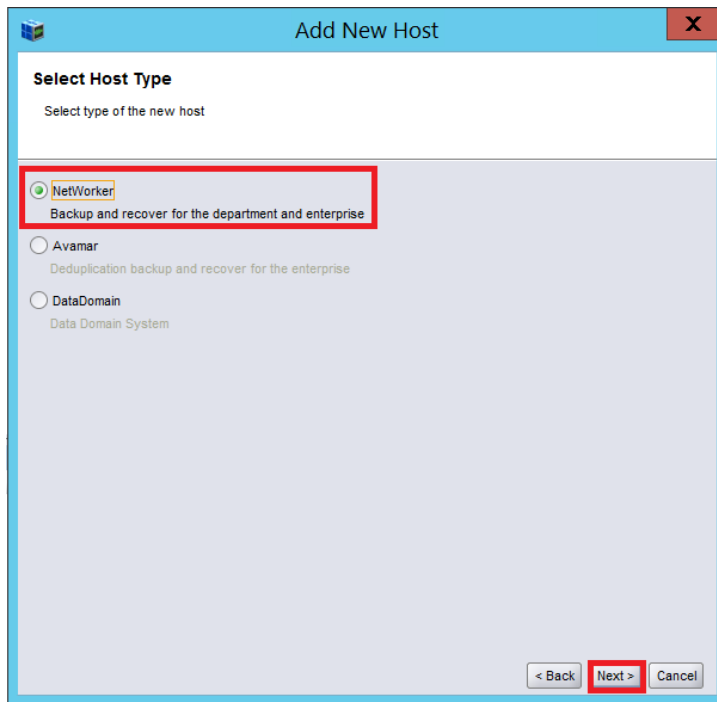
1. Open the Networker Management Console (NMC).
2. Click **Enterprise**, select the storage node for which the QoreStor share will be configured as a backup device, right-click on **Enterprise >> New >> Host**.



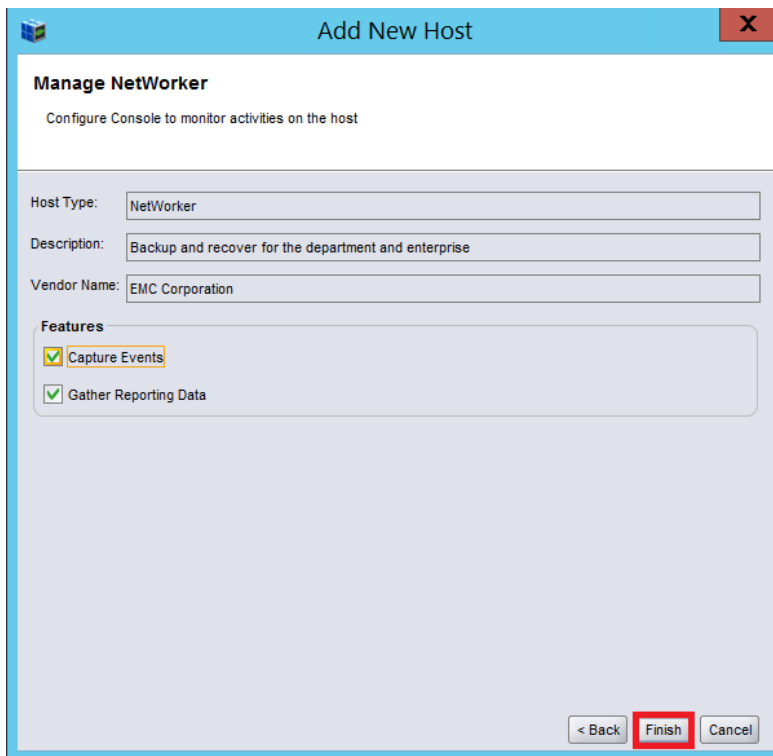
3. Add the **Host Name** and click **Next**.



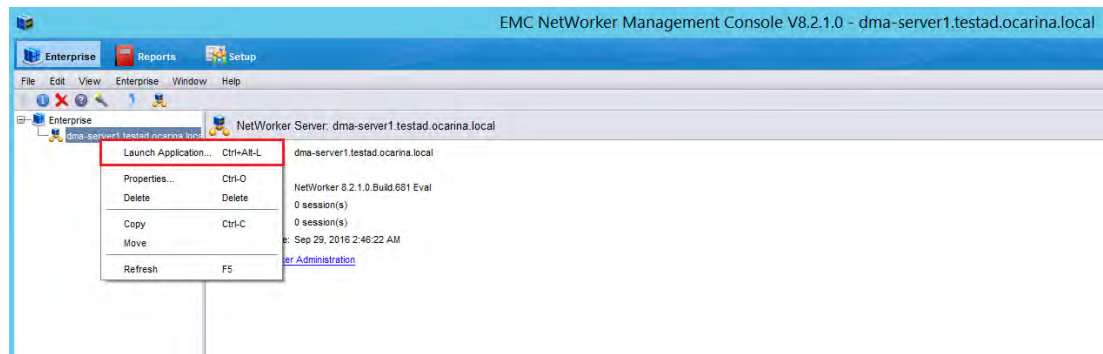
4. Select **Networker** and click **Next**.



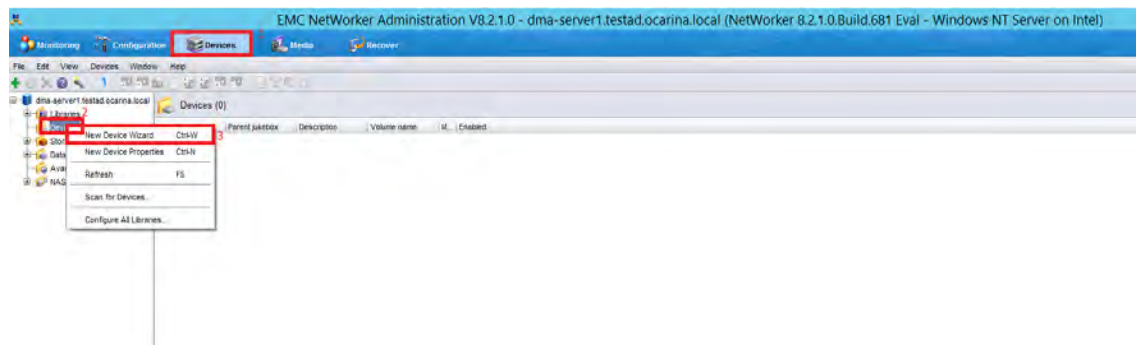
5. Click Finish.



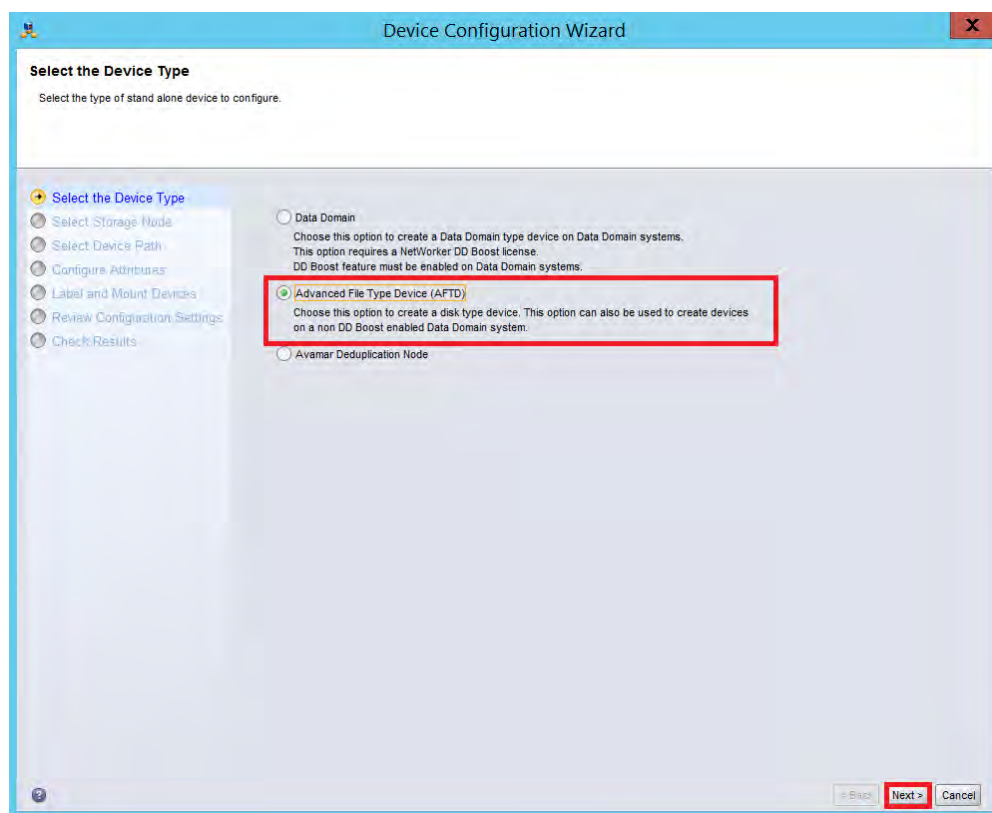
6. Right-click and select the newly created Networker application and click **Launch Application**.



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



8. Select **Advanced File Type Device (AFTD)**.



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**.

Device Configuration Wizard

Select Storage Node

Select the storage node to place this AFTD on. If the storage to be configured is remote to that storage node, enter a network path to the storage. Supply a username and password to browse the storage and select device paths, or manually enter the paths.

Select the Device Type

Select Storage Node

Select Device Path

Configure Attributes

Label and Mount Devices

Review Configuration Settings

Check Results

Storage Node: dma-server1.testad.ocarina.local

☐ Dedicated Storage Node

☒ Device storage is remote from this Storage Node.

Specify CIFS path or NFS path. NFS path can be specified either as <NFS Server>/<export> or as a Unix path

Network Path: \\10.250.212.110\\cifs_nw

Browse or Manual

☒ Browse storage node or network path

☐ Manually enter local or remote device paths

Authentication

Username can also be entered as username:uid if specifying NFS server and export name

Username: localhostadministrator

Password:

< Back **Next >** Cancel



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

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**.

The screenshot shows the 'Device Configuration Wizard' window, specifically the 'Select Storage Node' step. The 'Storage Node' dropdown is set to 'dina-server-rhe6'. Below this, the 'Device storage is remote from this Storage Node' checkbox is checked. A red box highlights the 'Specify CIFS path or NFS path' instruction and the 'Network Path' field, which contains '/mnt/nfs'. Another red box highlights the 'Authentication' section, showing the 'Username' field with 'root' and the 'Password' field with masked characters. The 'Next >' button is highlighted with a red box.

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

The screenshot shows the 'Device Configuration Wizard' window, specifically the 'Select the Device Path' step. The 'New Folder' button is highlighted with a red box and a red '1'. Below it, a folder named 'dina-server1.testad.ocarma.local\\10.250.212.110\\cifs_nw' is listed, and its 'Enabled' checkbox is checked, highlighted with a red box and a red '2'. At the bottom, the 'Selected Device Paths' list contains '\\10.250.212.110\\cifs_nw\\cifs'. The 'Next >' button is highlighted with a red box and a red '3'.

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.

Device Configuration Wizard

Configure Device Attributes

Fill in any device attributes. Give each device a unique name. If clients will backup directly to this storage (Client Direct), then enter those access paths in the form of CIFS or Unix Automounter paths.

Select the Device Type
Select Storage Node
Select Device Path
Configure Attributes
Label and Mount Devices
Review Configuration Settings
Check Results

NetWorker D...	Comment	Device Path	Client Direct Paths	Target ...	Max Sessions
cifs		\\10.250.212.110\cifs_nw\cifs...		4	32

NetWorker Device Name: cifs

Comment:

Device Path: \\10.250.212.110\cifs_nw\cifs

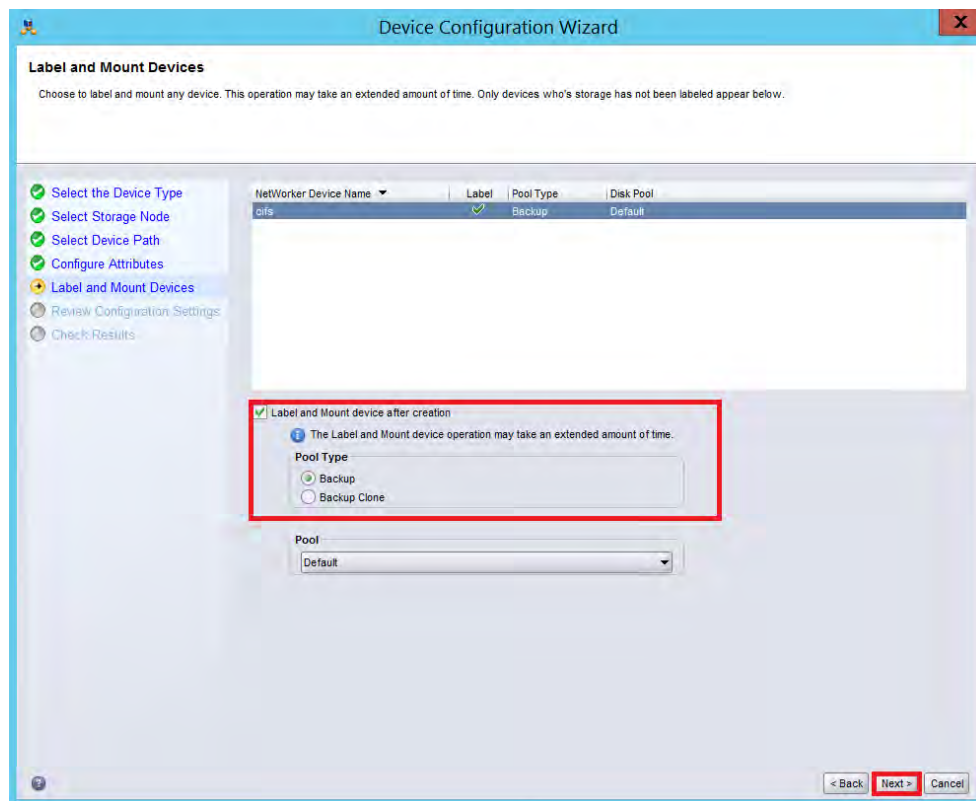
Client Direct Paths:

Target Sessions: 4

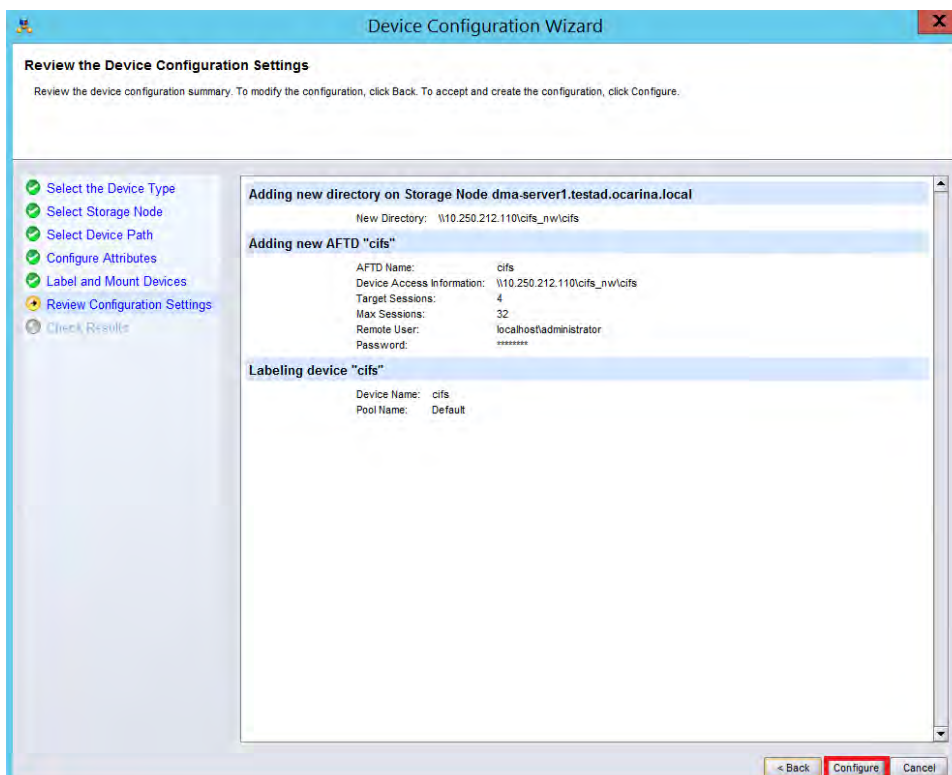
Max Sessions: 32

< Back Next > Cancel

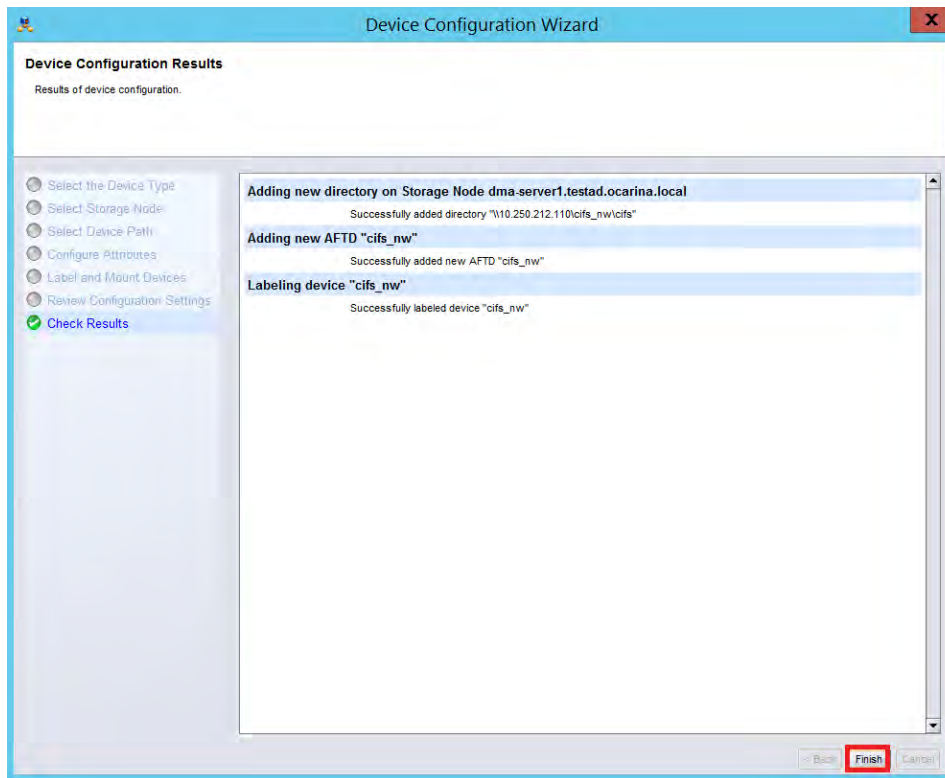
13. The new Networker device should have Pool Type set to **Backup**. Click **Next**.



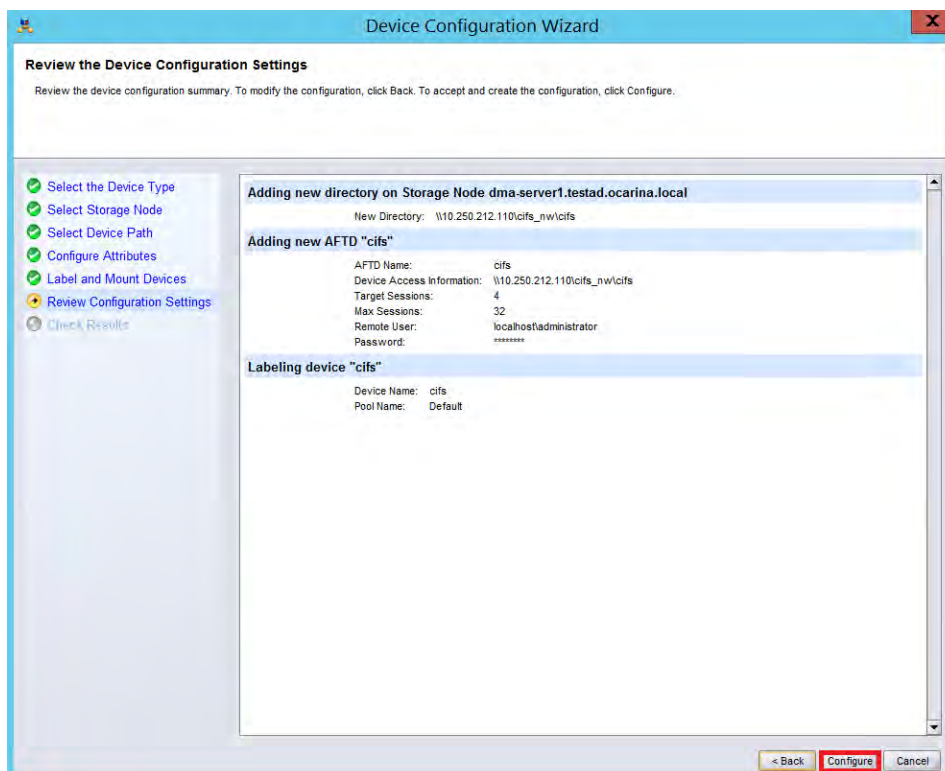
14. Review the configuration and click **Configure**.



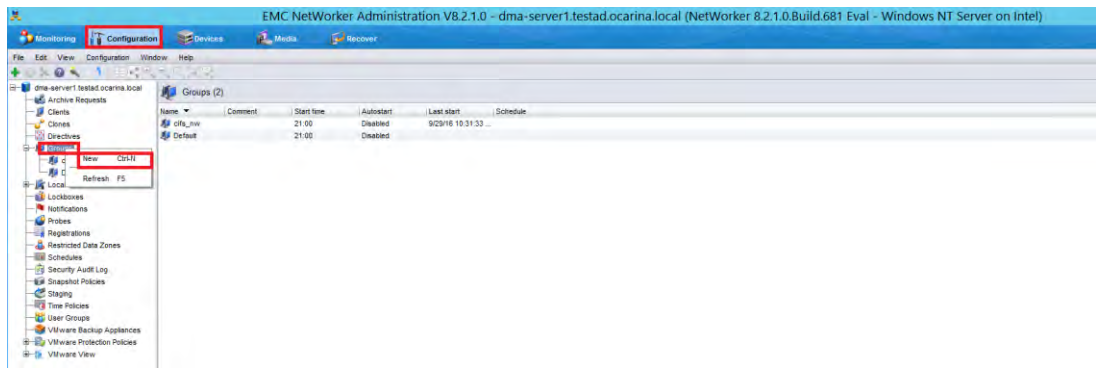
15. Check the results and click **Finish**.



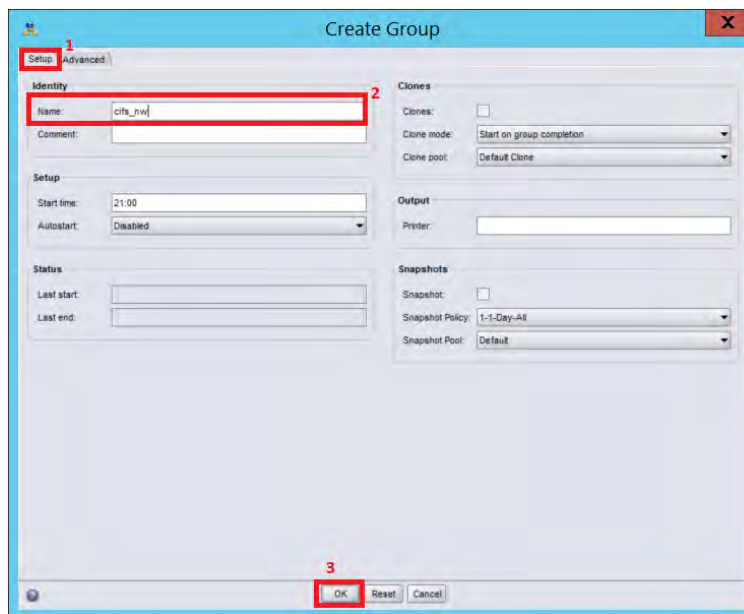
16. Review the Device configuration settings and click **Configure**.



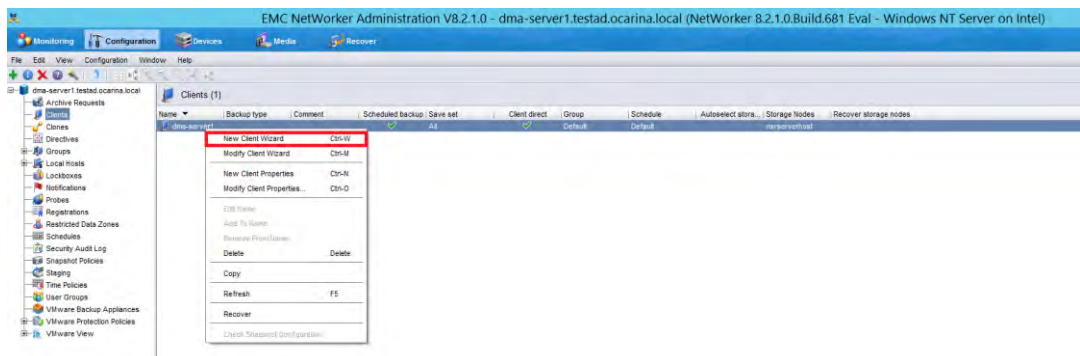
17. On the **Configuration** tab, Right click on **Groups** and select **New**.



18. Fill the Required details and click **OK**.



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



20. Specify the **Client Name** and click **Next**.

Client Backup Configuration

Specify the Client Name and Type

Specify the NetWorker client name and the client type. Select the Traditional NetWorker client option for non-VMware clients.

Specify the Client Name and Type

Client Name:

☒ **Traditional NetWorker client**
Configure a backup using the NetWorker client host software. Not for VMware clients.

☐ NDMP client
Configure a backup for NDMP client.

☐ NAS device
Configure a snapshot backup for a NAS device.

☐ VMware client
This is a legacy option. It was previously used to configure a VMware client for traditional backup or a proxy based backup. Using VMware Backup Appliance is now the recommended way to backup VMware virtual machines.

☐ VMware proxy host
This is a legacy option. It was previously used to configure a VMware VADP proxy host to back up virtual machines. Using VMware Backup Appliance is now the recommended way to backup VMware virtual machines.

21. Select the **Backup Application Type** and click **Next**.

Client Backup Configuration

Select the Backup Application Type

From the list of applications available in the table, select the application you want to configure. The listed applications represent the NetWorker modules that are installed in your setup.

Specify the Client Name and Type

Specify the Backup Configuration Type

Client Operating System:

NetWorker Client Version:

Available Ap... | Support NetWorker Snapshot Management

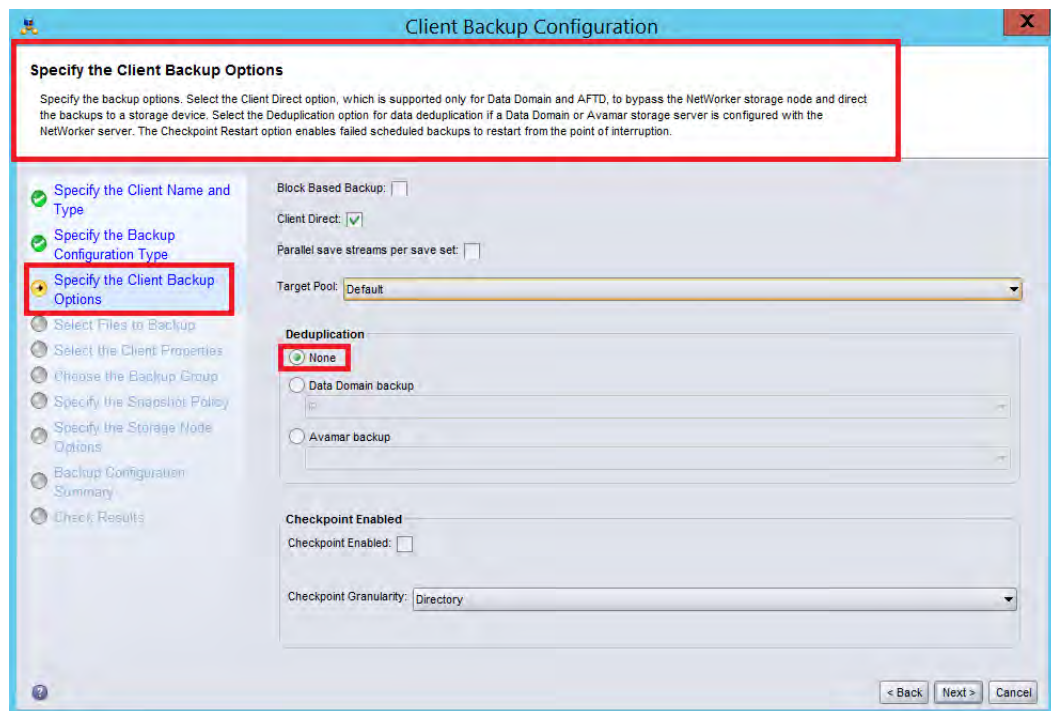
Filesystem	Yes

☐ Enable NetWorker Snapshot Management on the selected application

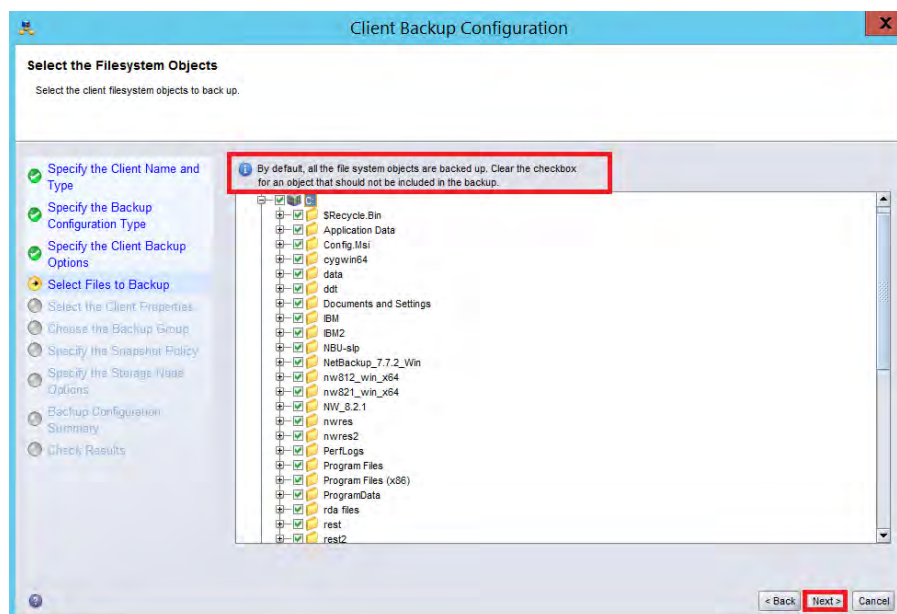
22. In **Specify the Client Backup Options**, define the following settings as follows.

- Deduplication** should be set as **None**
- 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.



23. Select the Backup folder and click **Next**.



24. Select the **Networker Client Properties** and click **Next**.

Select the NetWorker Client Properties

Specify the NetWorker client properties. Click Next without making any changes to accept the default properties.

Specify the Client Name and Type

Specify the Backup Configuration Type

Specify the Client Backup Options

Select Files to Backup

Select the Client Properties

Choose the Backup Group

Specify the Snapshot Policy

Specify the Storage Node Options

Backup Configuration Summary

Check Results

Browse policy: Maintain backup entries in the online file index Month

Retention policy: Maintain backup entries in the save set index Year

Backup schedule: Default

Client comment:

Remote access:

< Back Next > Cancel

25. Specify the NetWorker Backup Group and click Next.

Specify the NetWorker Backup Group

Select an existing NetWorker backup group or create a new group for the backup, and specify the scheduled backup start time.

Add to an existing group

Name	Client Entries	Start Time
<input checked="" type="checkbox"/> cifs_nw	1	21:00
<input type="checkbox"/> Default	1	21:00

Create a new group

Group Name:

Client Entries:

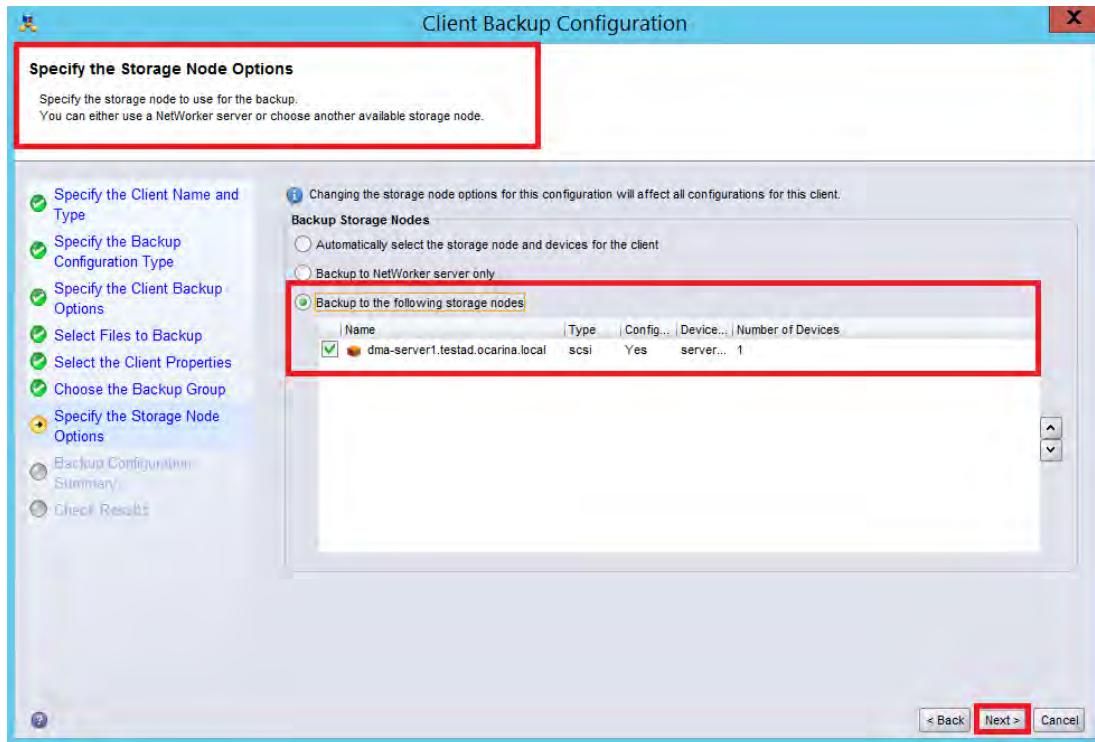
Schedule Options

Scheduled Backup Start Time (24-hour clock): 21:00

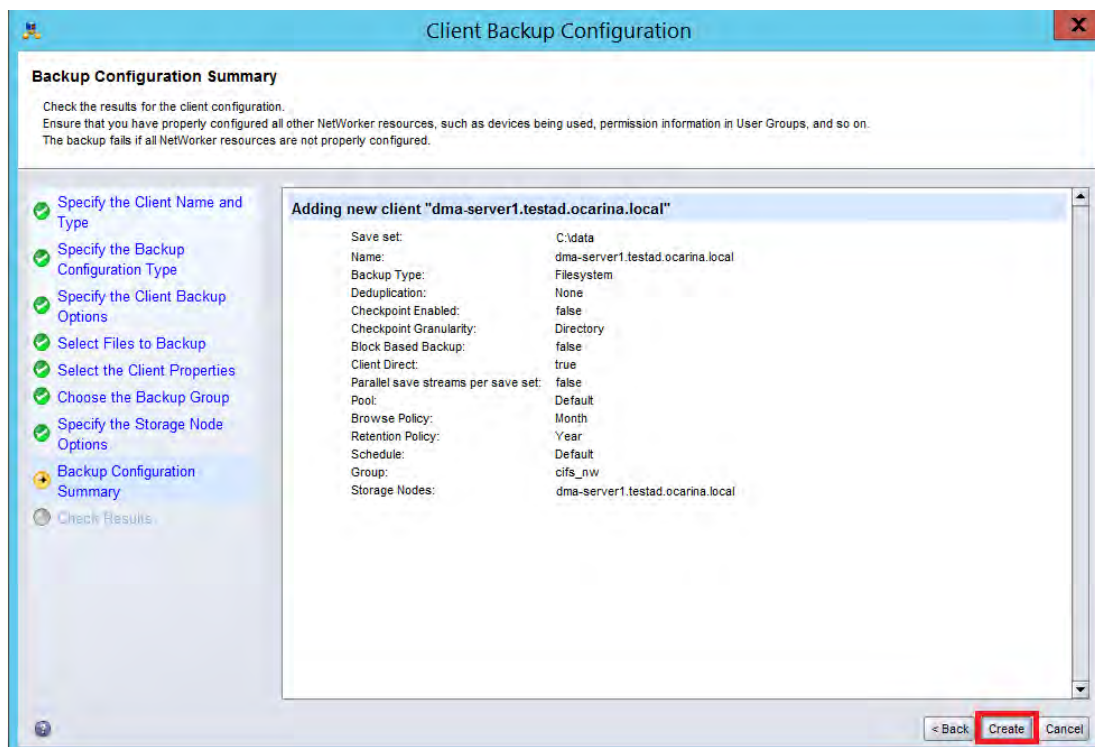
☐ (undiscoverably) start the backup at the scheduled time

< Back Next > Cancel

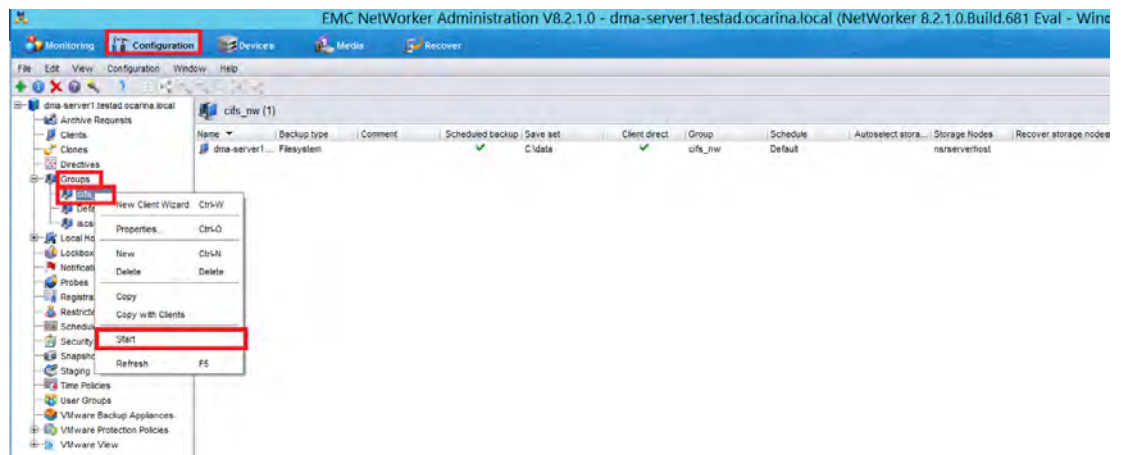
26. Specify the Storage Node Options and click Next.



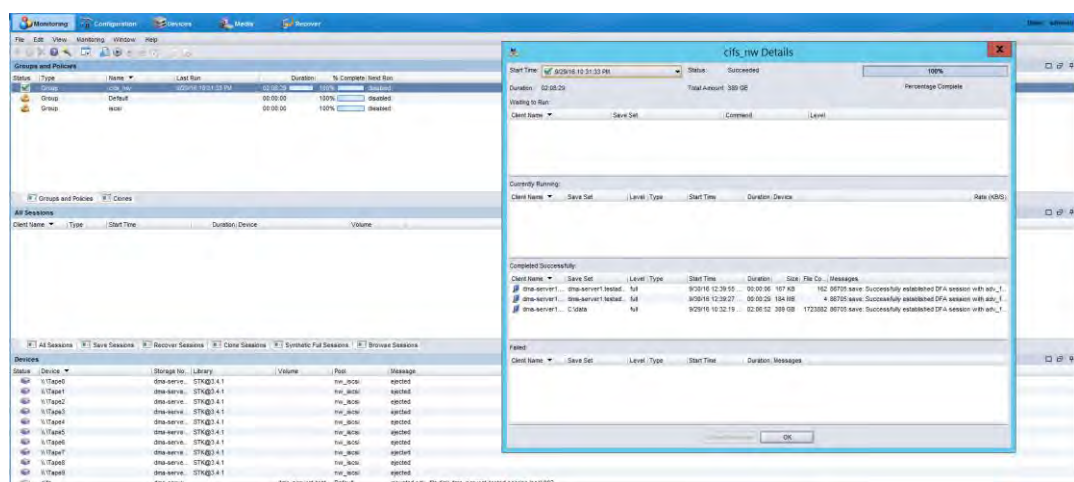
27. Verify the **summary** and click **Create**.



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



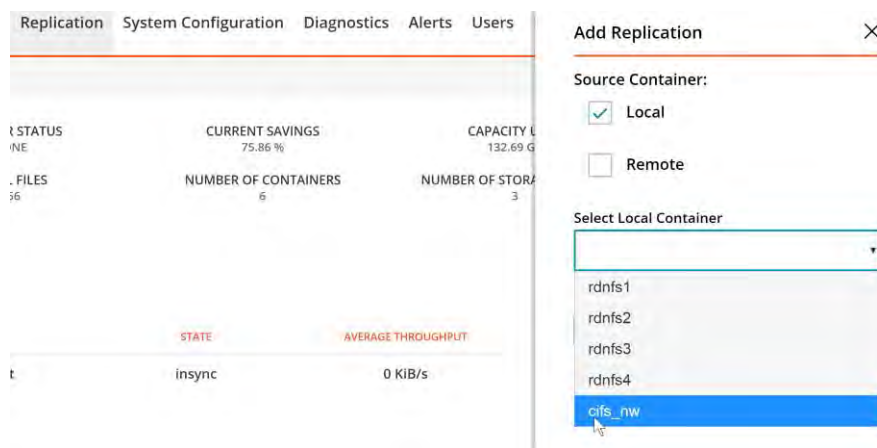
29. Monitor the job status in the **Monitoring** tab.



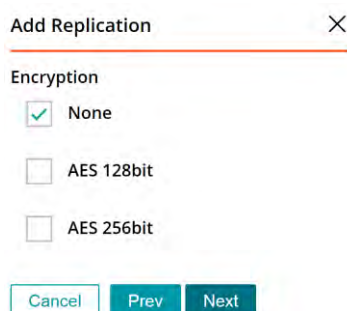
Setting up QoreStor system replication and restore from the replication target

Creating a replication relationship between two QoreStor systems

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



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.

Add Replication [X]

Replica Container

☐ Local

☒ Remote

Username
administrator

Password

Remote Machine
10.230.48.125

Retrieve Containers

Select Remote Container
[Loading spinner]

Cancel **Prev** **Next**

4. Verify the **Summary** and click **Finish**.

Add Replication [X]

Summary

Source container

Source: local

Container: cifs_nw

Encryption

Encryption: none

Replica container

Replica Location: remote

Container: target

Username: administrator

Password: *****

Machine: 10.230.48.125

Cancel **Prev** **Finish**

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

Quest QoreStor™ Dashboard Storage Groups **Replication** System Configuration Diagnostics Alerts Users Management About admin

Replications

Operating System: CentOS Linux release 7.3.1611 (Core)	CLEANER STATUS: DONE	CURRENT SAVINGS: 75.66 %	CAPACITY USED: 132.69 GB	PHYSICAL CAPACITY: 275.60 GB
System State: Operational Mode	TOTAL FILES: 166	NUMBER OF CONTAINERS: 6	NUMBER OF STORAGE GROUPS: 7	DICTIONARY TYPE: STANDARD
HostName: networker-qr-01				
System ID: 423169A3E173688BF26201304646F72F				
Version: 5.0.1.105				

SOURCE	STATUS	REPLICA	STATE	AVERAGE THROUGHPUT	DEDUPE NETWORK SAVINGS
cifs_nw	Online	target	insync	0 KiB/s	0.00%

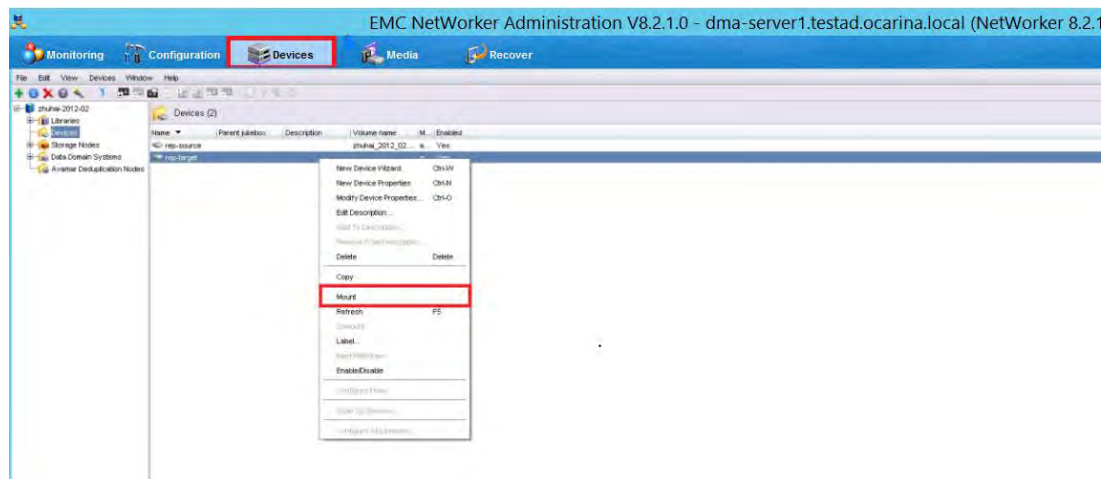
Add Replication

Restoring from the replication target container

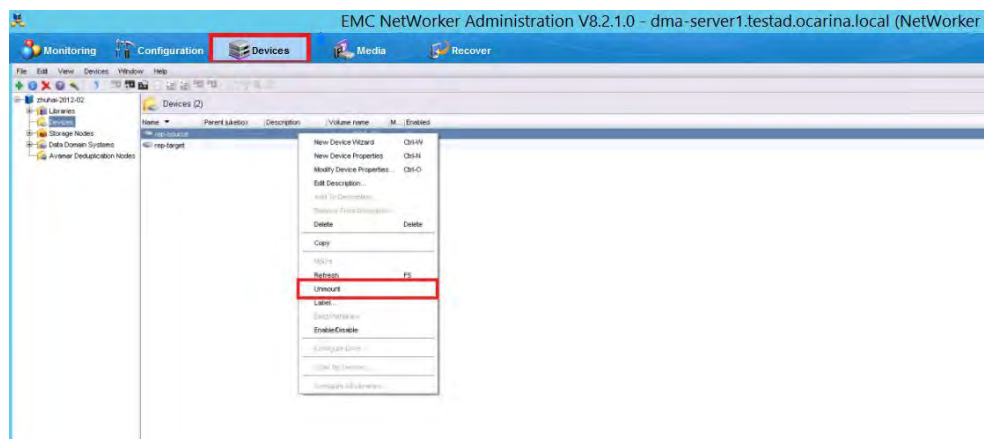
1. Add the target container onto the Networker storage node. Right-click **Device** > **New Device Properties**, and then enter necessary information for the target device. When complete, mount the device.



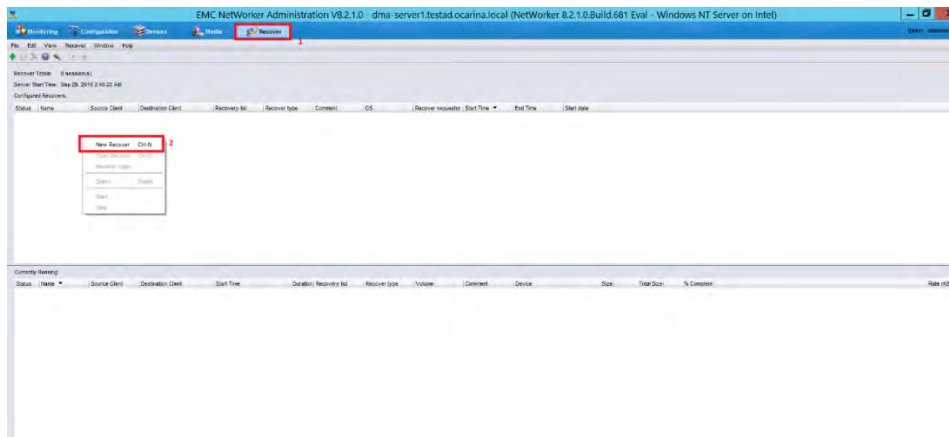
NOTE: Do not label the target device.



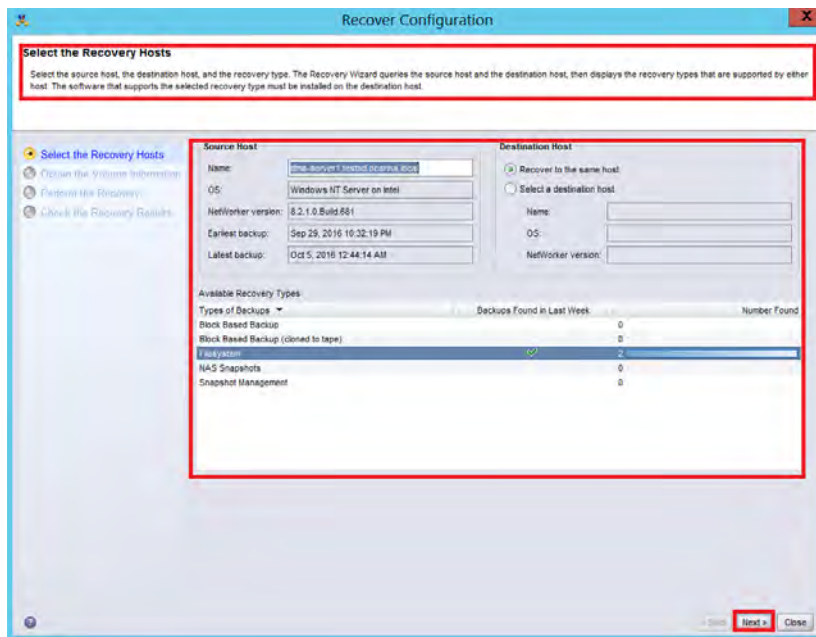
2. Unmount the source container.



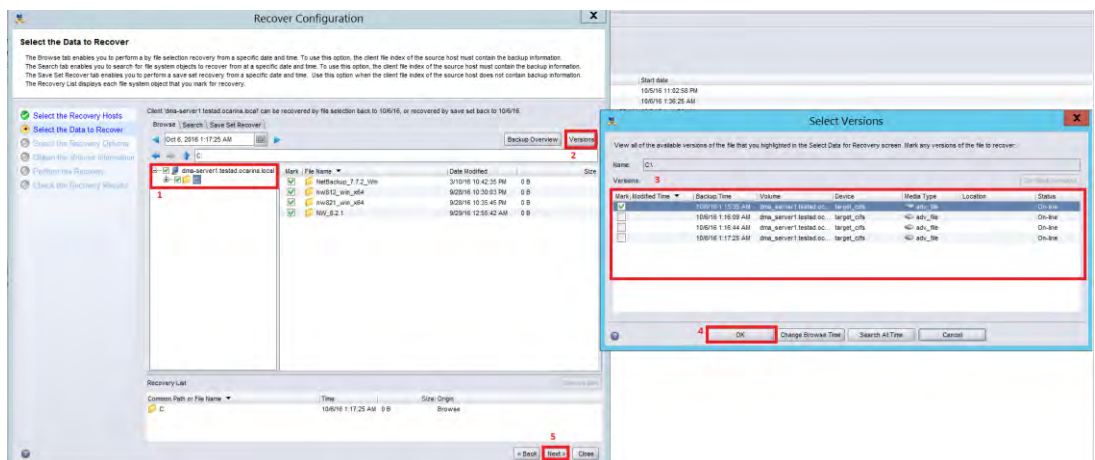
3. Go to **Recover** Tab, Right click and Add **New Recovery**



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



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



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

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.

Select the Recovery Hosts
Select the Data to Recover
Select the Recovery Options
 Obtain the Volume Information
 Perform the Recovery
 Check the Recovery Results

File Path for Recovery

☐ Original path

☒ New destination path

E:\RESTORE

Duplicate File Options

☒ Rename the recovered file

☐ Do not recover the file

☐ Overwrite the existing file

☐ Advanced Options

< Back **Next >** Close

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

Recover Configuration

Obtain the Volume Information

You can allow the Recovery Wizard to select the required volumes or you can select the required backup or clone volumes. The Recovery Wizard performs the recovery from the first storage node in the Recover storage node attribute for the source client. Use the Storage node field to select a storage node and override storage node affinity configurations.

Select the Recovery Hosts
Select the Data to Recover
Select the Recovery Options
Obtain the Volume Information
 Perform the Recovery
 Check the Recovery Results

☒ Fetching volume information may take some time.

☐ Allow NetWorker to select the required volumes for recovery (Recommended)

☒ View the required volumes and optionally select alternate volumes of cloned data if available

Volumes

Required Volumes

Volume	Device or Location	Media Type	Status
dms_server1.tes	target_cifs	adv_file	On-line

☒ Use the above volumes for recovery

☐ Select alternate volumes of cloned data by pool

Pool:

Alternate Volumes

Volume	Device or Location	Media Type	Status
--------	--------------------	------------	--------

Storage Node:

Storage node:

< Back **Next >** Close

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

Recover Configuration

Perform the Recovery

You can start the recover now or schedule the recovery to start later. You can configure a hard stop time to control how long the Recovery Wizard performs the recovery operation. When you configure a hard stop time, the Recovery Wizard stops an in-progress recovery at the specified time.

Identity

Recover name: restore-nw

Comment:

Recovery Start Time

☒ Start recovery now

☐ Schedule recovery to start at

Specify a hard stop time:

Recover Resource Persistence

☒ Persist this resource until deleted by user

☐ Automatically remove this resource based on jobs database retention

Summary

Adding new recover

Source Client Name:	dma-server1.testad.ocarina.local
Source Client Operating System:	Windows NT Server on Intel
Destination Client Name:	dma-server1.testad.ocarina.local
Destination Client Operating System:	Windows NT Server on Intel
Recover Type:	Filesystem
Volume Information:	Use the above volumes for recovery
Recover List:	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:\
Recover File to:	E:\RESTORE
Duplicate file option:	Rename the recovered file

< Back **Run Recovery** Close

9. Check the Recovery Results.

Recover Configuration

Check the Recovery Results

Monitor the progress of the recovery operation. When you close this window, the recovery operation continues. To display this page again, right-click the recovery configuration in the Recover window and select Open Recover. Select Cancel Recovery to stop the recovery operation.

Recover Name: restore-nw **Size:** 2507 MB **79%**

Source Client: dma-server1.testad.ocarina.local **Completed:** 2507 MB **Cancel Recovery**

Start time: Oct 6, 2016 10:38:07 PM

Duration: 00:00:41

Drives: target_cifs

Volumes used: dma_server1.testad.ocarina.local.004

Recovery Log **Export Log File**

```

E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\sd_products.res
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\nsrmail.exe
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\nsrperf.exe
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\nsrperf.ini
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\perfmon.h
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\rcpinfo.exe
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\sjelm.exe
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\sjinq.exe
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\sjimm.exe
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\sjirdp.exe
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\sjirdtag.exe
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\sjirelem.exe
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\sjirc.exe
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\smtpmail.exe
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\win_x64\support\
E:\RESTORE\I\NW_8.2.1\nw821_win_x64\
E:\RESTORE\I\NW_8.2.1\nw821_win_x64.zip
E:\RESTORE\I\NW_8.2.1\nw821_win_x86.zip
E:\RESTORE\I\NW_8.2.1\
E:\RESTORE\I\
Received 86 file(s) from NSR server 'dma-server1.testad.ocarina.local'
Recover completion 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

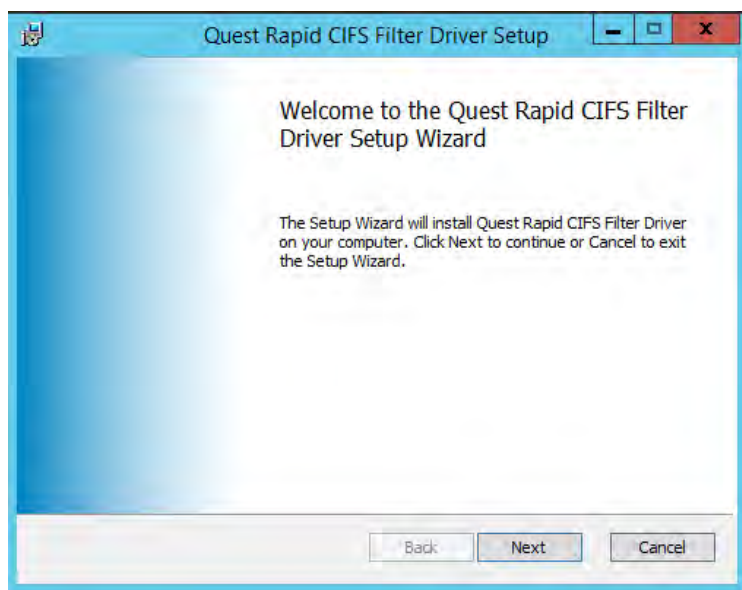
- The Storage Node OS must be the 64-bit version of Windows 2008 R2, Windows 2012/R2, or Windows 2016.

i **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.

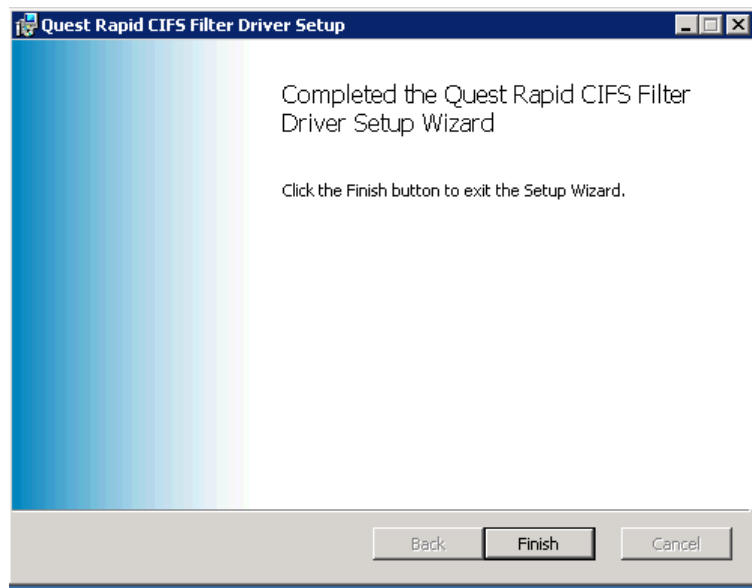
1. Download the MSI to the Server/Proxy by doing the following:
 - a. Go to support.quest.com/qorestor/ and select your version.
2. On the support page for your product, click **Software Downloads**.
3. For the RapidCIFS plugin for your QoreStor version, click the **Download** icon to download the installer 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.



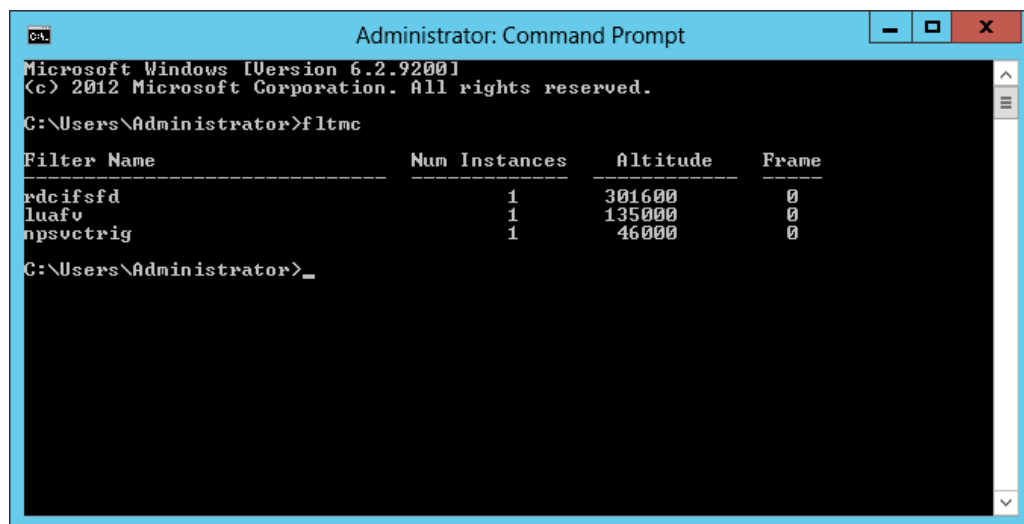
5. Click **Install**.



6. Click **Finish**.



7. Verify that the “**rdcifsfd**” driver is loaded automatically; this can be checked by using the command `fltmc`.



Configuring RapidNFS with NetWorker

Linux prerequisites

- 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/opensv/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.

- 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/opensv/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:
- 7 Run the installer:

```
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
```

```
./QuestRapidNFS-4.0.3036.0-centos5.7-x86_64.bin -install
```

```
[root@CVDemoCentOS RapidNFS]# ./QuestRapidNFS-4.0.3036.0-x86_64-RHEL.bin -install
Starting, please wait...
RDNFS file systems are not mounted, proceeding with installation...
2 processors with 4 cores each running at average 2600 MHz ...
Total computing power 20800 MHz ...
Preparing...
QuestRapidNFS
oca-libs
Installation successful!
Log for this operation is /var/log/rdnfs_installer.log
Cleaning up, please wait...
```

- 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.

i | **NOTE:** Refer to the document Best Practices Guide for QoreStor for guidance on setting up the cleaner.

The screenshot shows the Quest QoreStor System Configuration page. The 'Cleaner Schedule' section is active, displaying a table with columns for ACTION, DAY, START TIME, and END TIME. The table lists four scheduled runs for Monday, Tuesday, Wednesday, and Thursday, each from 13:00 to 18:00. Each row has a 'Remove' link. There are 'Cancel' and 'Submit' buttons at the bottom right of the schedule table. Above the table, there is an 'Upload SSL Certificate' button. The top navigation bar includes links for Dashboard, Storage Groups, Replication, System Configuration (selected), Diagnostics, Alerts, Users, Management, and About. The system status is shown as 'Operational mode'.

ACTION	DAY	START TIME	END TIME
Remove	Monday	13:00	18:00
Remove	Tuesday	13:00	18:00
Remove	Wednesday	13:00	18:00
Remove	Thursday	13:00	18:00

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

