



Setting Up Quest® QoreStor™ with Veritas™ NetBackup™

Technical White Paper

Quest Engineering

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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 with Veritas™ NetBackup™

Updated – August 31, 2018

Contents

Configuring QoreStor as a CIFS/NFS storage unit.....	5
Creating a CIFS container for use with Veritas NetBackup	5
Adding the QoreStor CIFS container as a storage unit on NetBackup	7
Creating a NFS container for use with Veritas NetBackup	9
Adding the QoreStor NFS container as a storage unit on NetBackup	12
Setting up QoreStor replication	14
Creating a CIFS/NFS replication session	15
Restoring from the replication target	17
 Configuring QoreStor as a OST storage unit	 18
Creating an OST container for use with Veritas Netbackup	18
Installing the OST plugin	20
Configuring the OST device in Veritas Netbackup	22
Adding QoreStor system as a Storage Server	22
Creating a Disk Pool	26
Create a Storage Unit	31
Configuring OST Optimized Duplication using a Storage Lifecycle Policy	33
 Setting up the QoreStor Series system cleaner	 38
 Monitoring deduplication, compression and performance	 41

Executive Summary

This document provides information about how to set up Quest QoreStor for Veritas NetBackup, including:

- Configuring the QoreStor system as a CIFS/NFS storage unit for Veritas Netbackup 7.X and 8.X
- Configuring an OST container on the QoreStor system for use with Veritas Netbackup 7.X and 8.X

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

<https://support.quest.com/qorestor/>

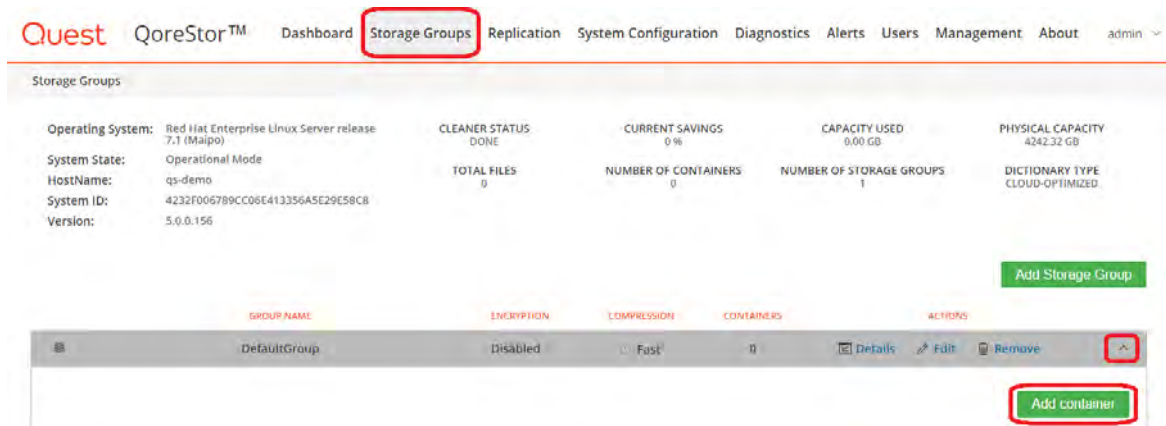


NOTE: The QoreStor/Veritas NetBackup build version and screenshots used for this paper may vary slightly, depending on the version of QoreStor/Veritas NetBackup software you are using.

Configuring QoreStor as a CIFS/NFS storage unit

Creating a CIFS container for use with Veritas NetBackup

- 1 Select the **Storage Groups** tab, then expand the drop down for the storage group into which you would like to add the container. Click **Add container**.



- 2 Enter a Container Name, and select **NAS** from the **Access Protocol** drop down menu. Then click **Next**.

The screenshot shows a dialog box titled "Add container" with a close button (X) in the top right corner. It contains two input fields: "Name" with the text "sample" and "Protocol" with a dropdown menu showing "NAS". Below these fields are three buttons: "Cancel", "Prev", and "Next". The "Next" button is highlighted with a red rectangular box.

- 3 Click the drop down on the **Access Protocols** field then select the check mark for **CIFS**. Leave **Marker Type** on **Auto**, then click **Next**.

The screenshot shows the "Add container" dialog box. The "Marker Type" dropdown is set to "Auto". Below it, the "Access Protocols" section has a dropdown menu showing "CIFS" with a checkmark. Below this, there are three checkboxes: "Select All", "NFS", and "CIFS". The "CIFS" checkbox is checked and highlighted with a red rectangular box. At the bottom right, the "Next" button is highlighted with a red rectangular box.

- 4 Fill in backup container information for CIFS options. Click **Next**.

The screenshot shows the "Add container" dialog box. The "CIFS Options" section is visible. Under "CIFS Client Access:", there are two checkboxes: "Open (allow all clients)" which is checked, and "Create Client Access List" which is unchecked. Below this is the "IP List" section, which is empty. At the bottom right, the "Next" button is highlighted with a red rectangular box.



NOTE: For improved security, Quest recommends adding IP addresses for only NetBackup Media Servers

- 5 Confirm the settings and click **Finish**. Confirm that the container has been added.

Add container

✕

Container summary

Name:

sample

Protocol:

NAS

Marker:

Auto

Connection summary

Protocol CIFS:

Access:

*

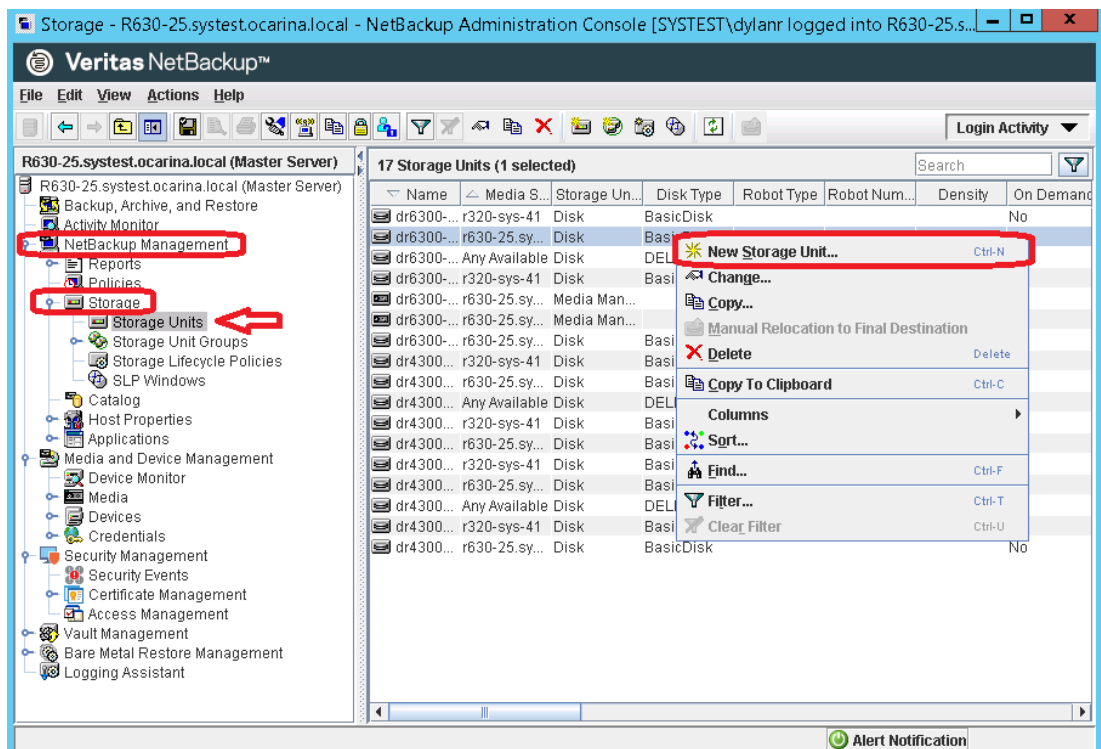
Cancel

Prev

Finish

Adding the QoreStor CIFS container as a storage unit on NetBackup

- 1 Open the NetBackup administration console. Expand **NetBackup Management** and **Storage**, then select **Storage Units**. Right-click anywhere in the right hand panel and select **New Storage Unit**.



2. Add a Storage unit name for the device, then select the **Storage unit type** drop down and click **Disk**. Select the **Disk type** drop down and click **BasicDisk**. If needed, select the **Media server** drop down and pick the correct media server. In the **Absolute pathname to directory** field put the UNC path to the QoreStor CIFS container. Set the **Maximum concurrent jobs** to a desired level. Click **OK**.

The screenshot shows the 'New Storage Unit' dialog box. Red arrows point to the following fields: 'Storage unit name' (containing 'sample_storage_unit'), 'Storage unit type' (set to 'Disk'), 'Disk type' (set to 'BasicDisk'), 'Media server' (set to 'r630-25.systest.ocarina.local'), 'Absolute pathname to directory' (containing '\\r630-25.systest.ocarina.local\\sample'), 'Maximum concurrent jobs' (set to '20'), and the 'OK' button at the bottom.

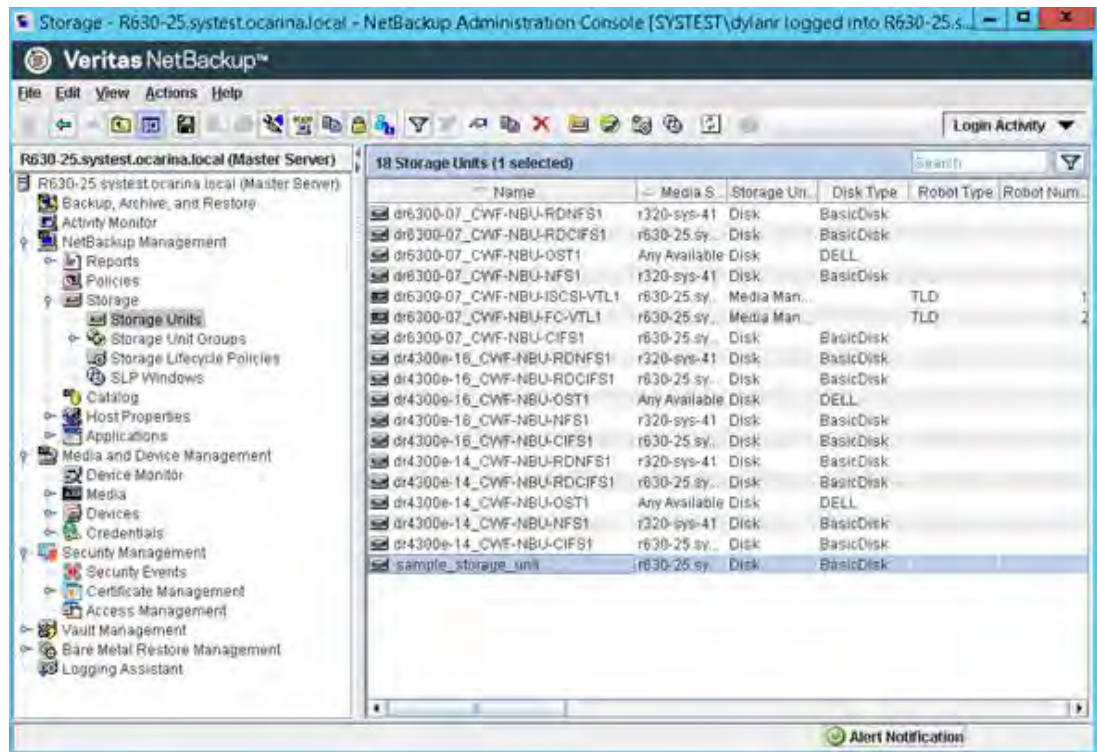
NOTE: With all of the above information entered correctly you may test the storage unit by clicking **View Properties**. If this returns an error or a Capacity of 0 Megabytes, then there is a problem and jobs will not succeed to this storage unit. Double check the above recommendations and then contact Support.

The screenshot shows the 'Directory Properties' dialog box. It displays the following details for the directory '\\dr6300-07.systest.ocarina.local\\sample':

Properties	
Capacity:	16267775 Megabytes
Available Space:	15200446 Megabytes
% Full:	7

The 'Close' button is at the bottom right.

- 3 The storage unit should now be seen on the **Storage Units** panel

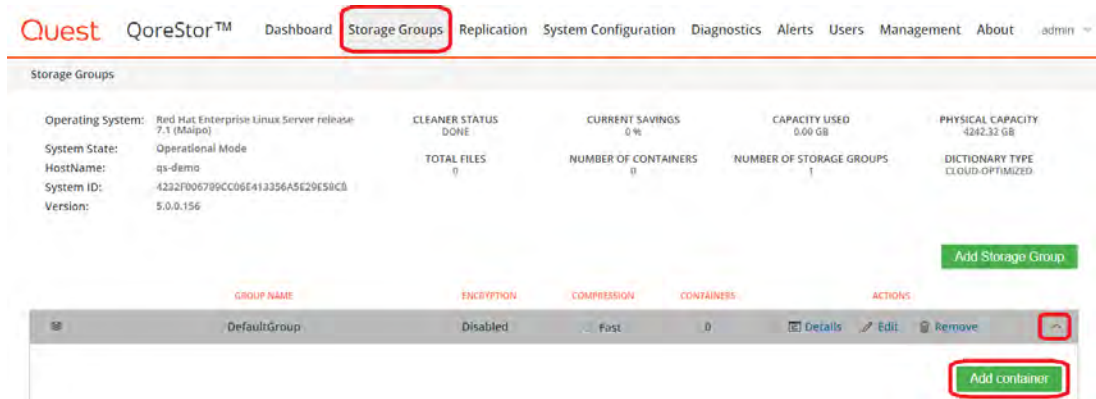


NOTE: Please review the *QoreStor Interoperability Guide* for the supported maximum number of connections.

To change this number later at any time, go to the **Storage Units** panel, right click the storage unit, and select **Change...**

Creating a NFS container for use with Veritas NetBackup

- 1 Select the **Storage Groups** tab, then expand the drop down for the storage group into which you would like to add the container. Click **Add container**.



- 2 Enter a **Container** Name, and select **NAS** from the **Access Protocol** drop down menu. Then click **Next**.

- 3 Click the drop down on the **Access Protocols** field then select the check mark for **NFS**. Leave **Marker Type** on **Auto**. Click **Next**.

- 4 Fill in backup container information for **NFS options**, 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

Cancel
Prev
Next

NOTE: For improved security, Quest recommends adding IP addresses for only NetBackup Media Servers

- Confirm the settings and click **Finish**. Confirm that the container is added.

Add container
X

Container summary

Name: sample

Protocol: NAS

Marker: Auto

Connection summary

Protocol NFS:

Options: Read Write

Root Mapping: root

Access: *

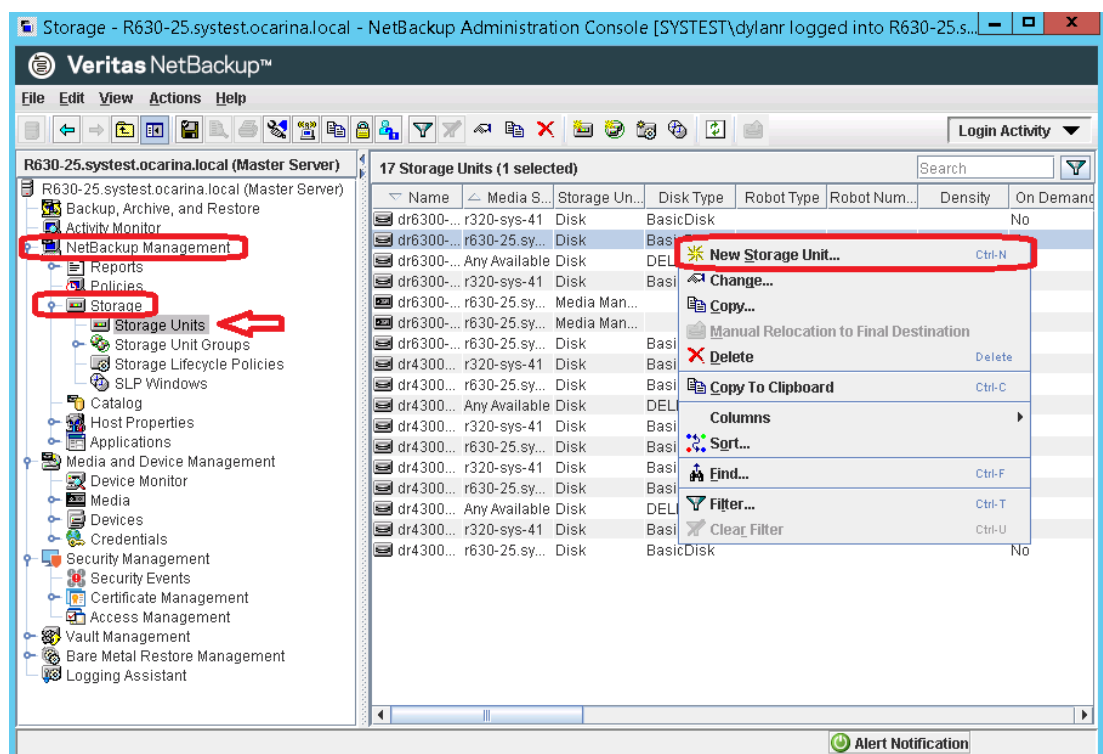
Cancel
Prev
Finish

Adding the QoreStor NFS container as a storage unit on NetBackup

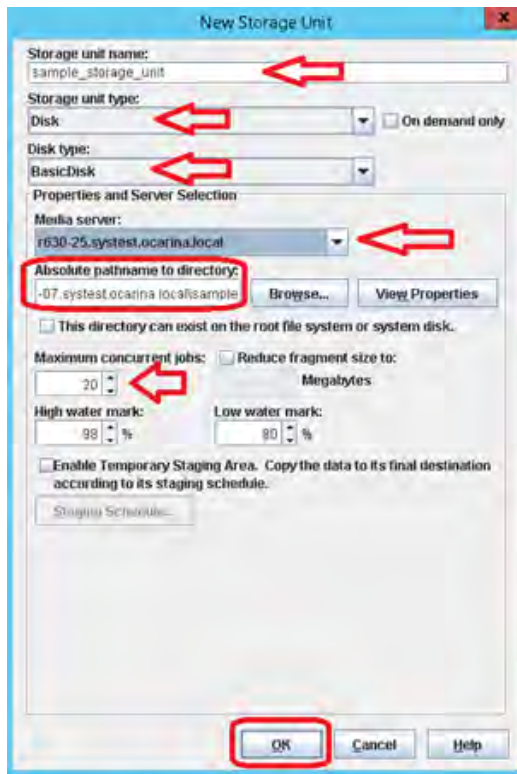
- 1 Mount the QoreStor NFS Container onto a Unix/Linux Media Server.

```
[root@r320-sys-41 ~]#  
[root@r320-sys-41 ~]# mkdir /mnt/sample  
[root@r320-sys-41 ~]# mount -t nfs 6300-07:/containers/sample /mnt/sample  
[root@r320-sys-41 ~]#
```

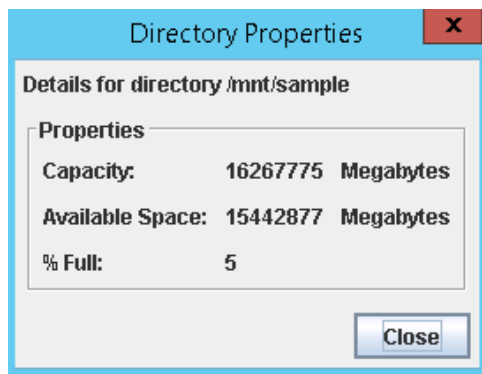
- 2 Open the NetBackup administration console. Expand **NetBackup Management and Storage**, then select **Storage Units**. Right click anywhere in the right hand panel and select **New Storage Unit**.



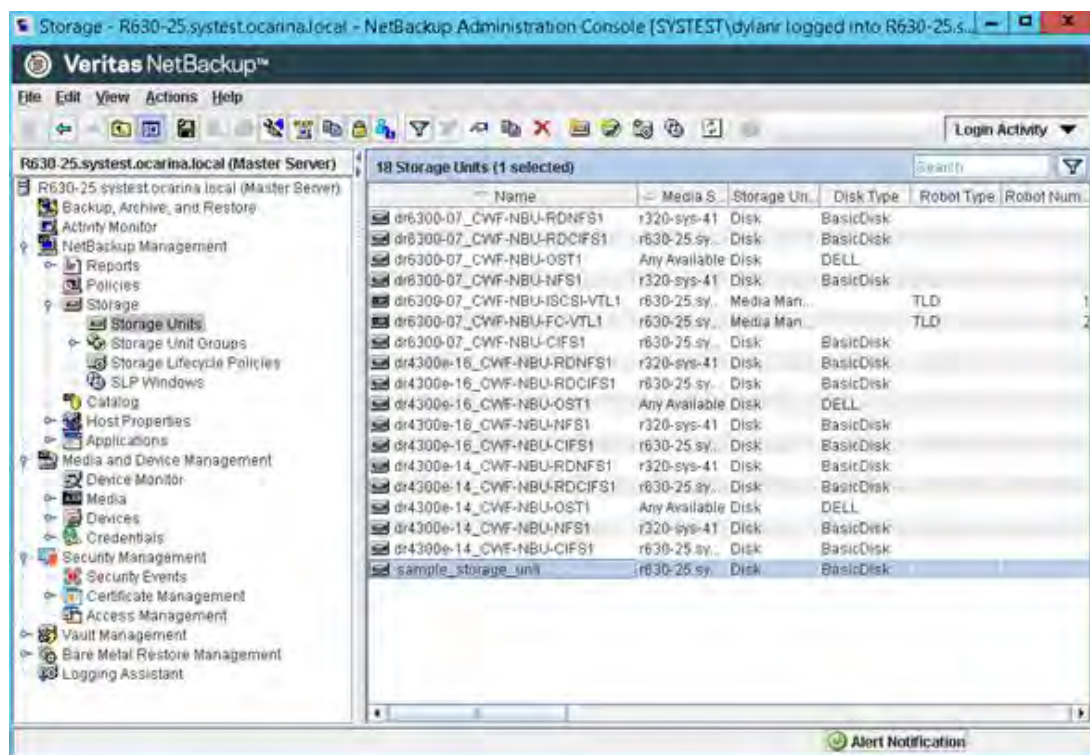
- 3 Add a Storage unit name for the device, then select the **Storage unit type** drop down and click **Disk**. Select the **Disk type** drop down and click **BasicDisk**. Select the **Media server** drop down and pick the correct media server if needed. In **Absolute pathname to directory**, put the mount path to the NFS container. Set the **Maximum concurrent jobs** to a desired level. Click **OK**.



i **NOTE:** With all of the above information entered correctly you may test the storage unit by clicking **View Properties**. If this returns an error or a Capacity of 0 Megabytes, then there is a problem and jobs will not succeed to this storage unit. Double check the above recommendations and then contact Support



4 The Storage Unit should now be seen on the **Storage Units** panel



i **NOTE:** Please review *QoreStor Interoperability Guide* for the supported maximum number of connections.

To change this number later at any time, go to the Storage Units panel, right click the storage unit, and select **Change....**

Setting up QoreStor replication

i **NOTE:** For the steps in this procedure, assume QS1 is the replication source QoreStor system, and QS2 is the replication target QoreStor system. Additionally, 'source' is the replication source container, and 'target' is the replication target container.

Creating a CIFS/NFS replication session

1. Create a source container on the source QoreStor system.
2. Create a target container on the target QoreStor system.
3. On the source QoreStor system, go to the **Replication** tab. Click **Add Replication**.



4. Select the source container for replication and click **Next**.

Add Replication ×

Source Container:

☒ Local

☐ Remote

Select Local Container

source ▼

Cancel Prev Next

5. Select the **Encryption Type** for the source container. Click **Next**.

Add Replication ×

Encryption

☐ None

☐ AES 128bit

☒ AES 256bit

Cancel Prev Next

6. Enter the target QoreStor systems information then click **Retrieve Remote Containers**. Select a target container from the populated list, and click **Next**.

Add Replication ✕

Replica Container

☐ Local

☒ Remote

Username
admin

Password

Remote Machine
qspl-6000-07.systest.ocarina.local

Retrieve Containers

Select Remote Container
target

Cancel Prev Next

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

Add Replication ✕

Summary

Source container

Source: local
Container: source

Encryption

Encryption: aes256

Replica container

Replica Location: remote
Container: target
Username: admin
Password: *****
Machine: qspl-6000-07.systest.ocarina.local

Cancel Prev **Finish**

8. Check Replication is added successfully and confirm the Replication details.

Restoring from the replication target

During a QoreStor system Disaster Recovery Scenario there are two options for restore. The first option is to simply reverse the replication configured between the source and target QoreStors, replicating all the data back to the original system. This option requires no re-configuration in NetBackup assuming the new source system has the original hostname or IP used. The second option is to import the images from the replicated system. This is a somewhat complicated process involving expiring the original images from the NetBackup master sever followed by a 2 phase import process in the **Catalog** section of the **NetBackup administrator console**. This will not be covered in detail as NetBackup covers this in several KB's and in their guides. See the following links:

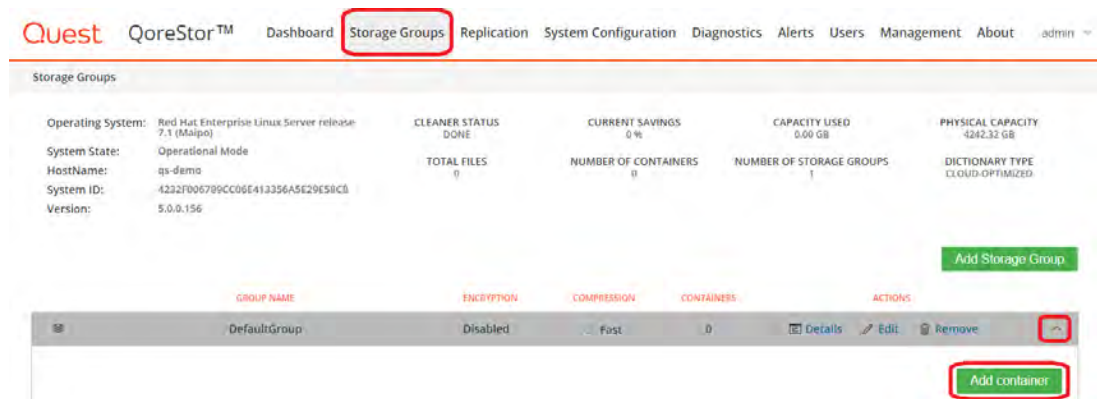
- https://www.veritas.com/support/en_US/article.000018385
- https://www.veritas.com/support/en_US/article.TECH43584

Configuring QoreStor as a OST storage unit

OpenStorage Technology is a protocol used by Veritas NetBackup to optimize backup jobs to deduplication storage devices. Using OST enables Media Servers to assist in the deduplication process often providing for decreased backup windows and increased performance. It also achieves network savings preventing some data from being sent over the network. The OST Protocol requires a NetBackup license in order to use this functionality.

Creating an OST container for use with Veritas Netbackup

- 1 Select the **Storage Groups** tab, then expand the drop down you would like to add the container into. Click **Add container**.



- Under **Protocol** , select **OST**. Enter a **Container Name** and then click **Next**.

Add container ✕

Name
sample

Protocol
OST

Cancel Prev **Next**

- Set the **LSU Capacity** as needed, and click **Next**.

Add container ✕

LSU Capacity:

☒ Unlimited

☐ Quota

Cancel Prev **Next**

- Review the configuration Summary page, and then click **Finish**.

Add container ✕

Container summary

Name: sample
Protocol: OST
Marker: Auto

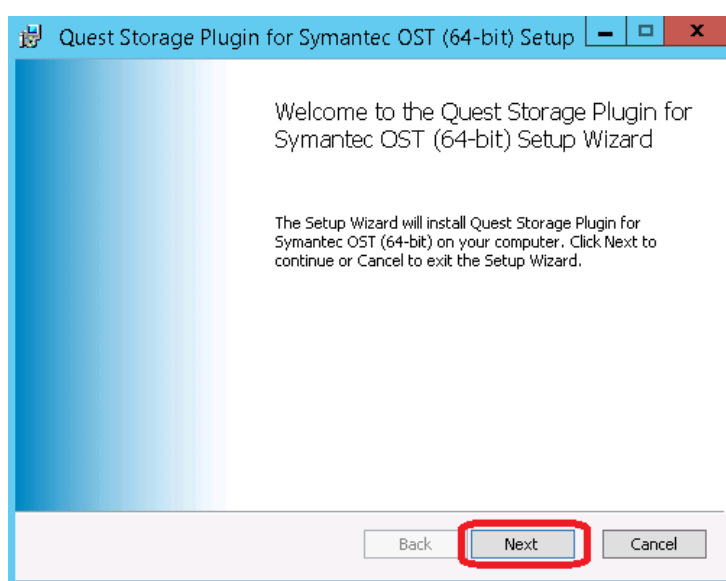
Connection summary

Capacity: Unlimited

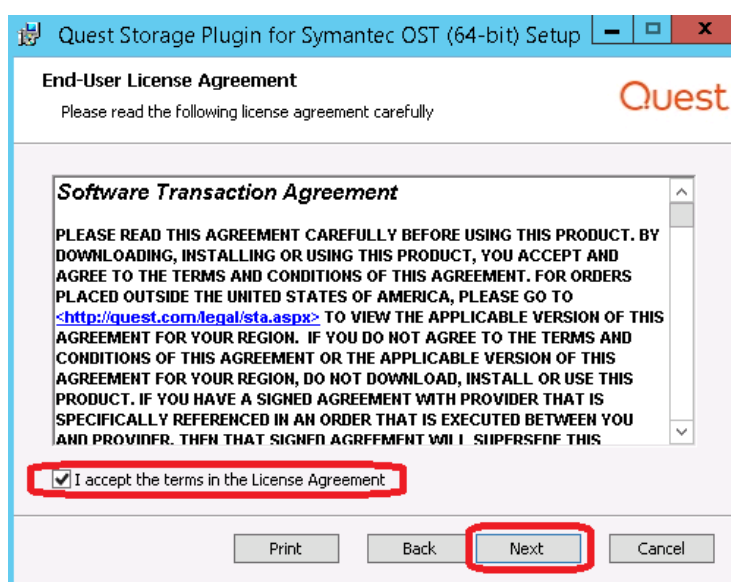
Cancel Prev **Finish**

Installing the OST plugin

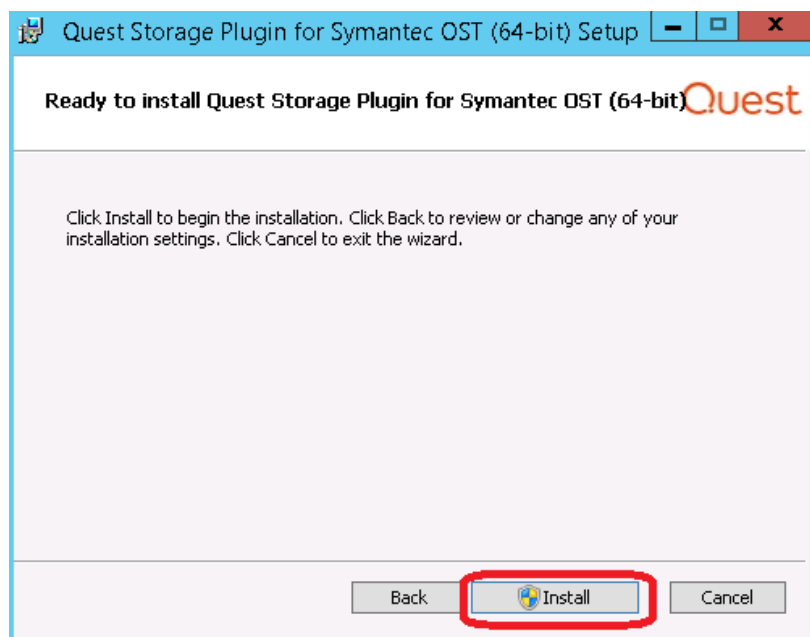
- 1 Before installing the OST plugin, the Media Server services will need to be stopped. The OST plugin should only be installed on Media/Master servers. Client side deduplication cannot be used with the Quest OST plugin. You can get the installation packages from the list of binaries provided by Quest, Inc.
- 2 On the Setup Wizard Welcome page, click **Next**.



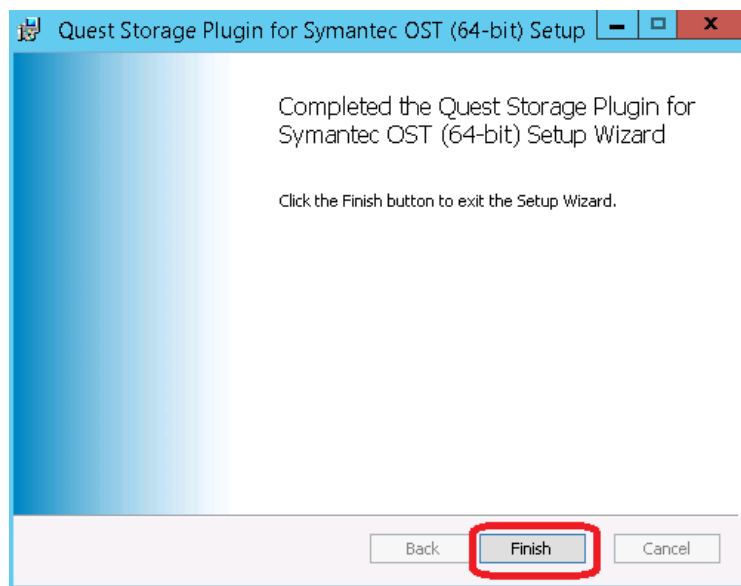
- 3 Accept the license agreement. Click **Next**.



- 4 Click **Install** to proceed with installation.



- 5 Click **Finish** to complete the installation of the OST plugin.

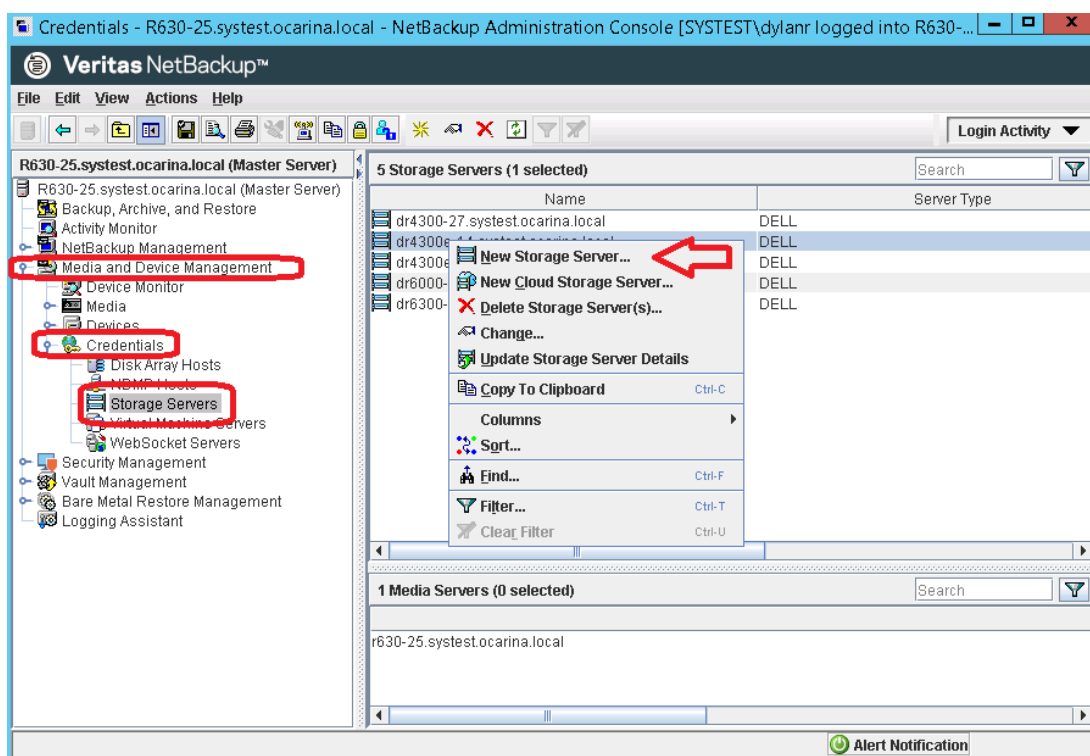


Configuring the OST device in Veritas Netbackup

Creating an OST Storage Unit consists of three steps in Netbackup. First the QoreStor device will need to be added as a Storage Server. Next a Disk Pool of one or more containers from a Storage Server will need to be added. Finally, a Storage Unit can be created from the containers added to the Disk Pool.

Adding QoreStor system as a Storage Server

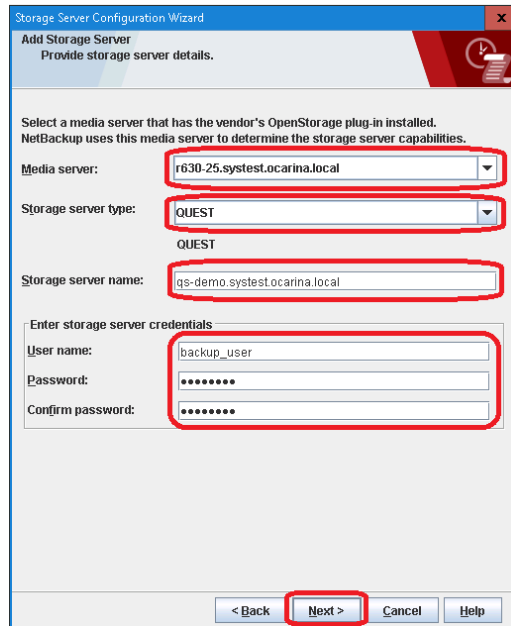
- 1 Launch the NetBackup administration console. Expand **Media and Device Management**, then **Credentials**. Select the **Storage Servers** section then right click anywhere in the storage servers panel on the right side of the screen. Click **New Storage Server....**



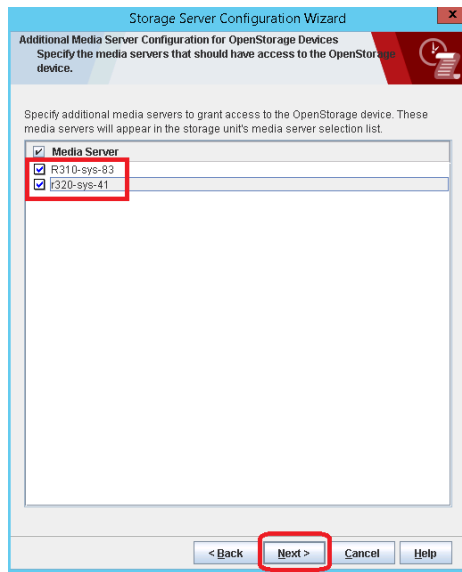
- 2 In the **Storage Server Configuration Wizard**, select the **OpenStorage** option and click **Next**.



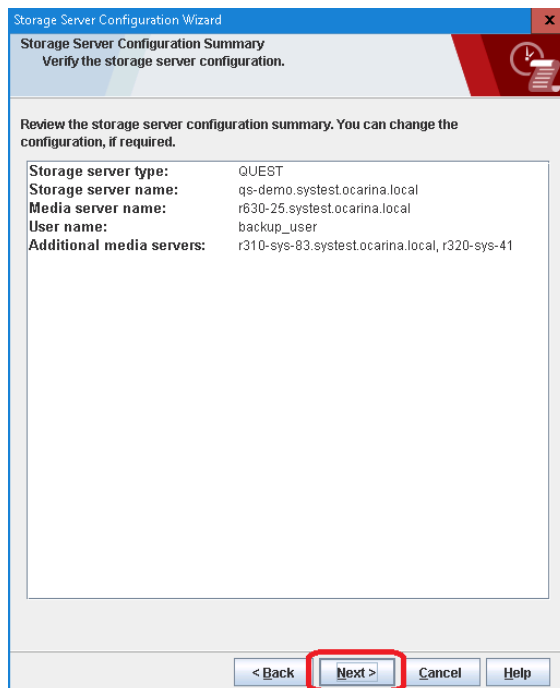
- 3 On the following screen select the **Media server** dropdown and select the appropriate media server if needed. Then in **Storage server type**, enter “QUEST” without quotation marks. **DO NOT click the Storage server type dropdown.** In the **Storage server name** field, add the fully qualified domain name or IP address of the QoreStor server. In the **User name** field add the OST username configured on the QoreStor server. In the Password and Confirm password fields input the OST user password configured on the QoreStor server, Finally click **Next**. The default username is **backup_user** and the default password is **St0r@ge!** .



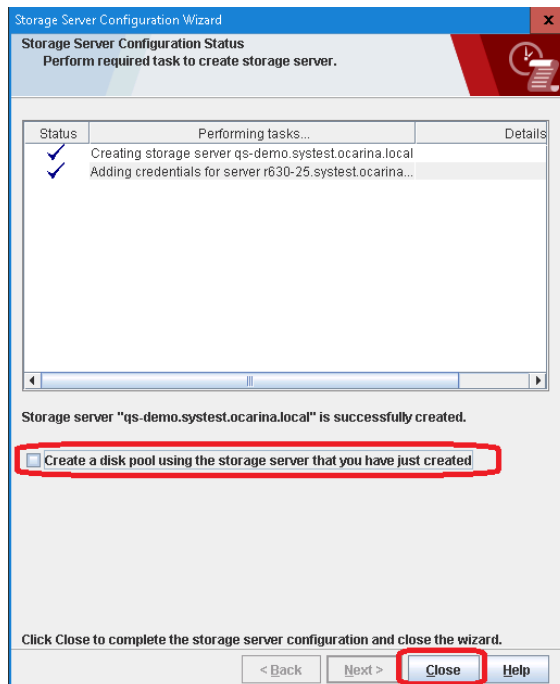
- 4 If additional Media Servers are available, you may select them for access now and click **Next**. If your environment only has one media server this screen will not show.



- 5 On the verify screen confirm all the information is accurate and click **Next**.

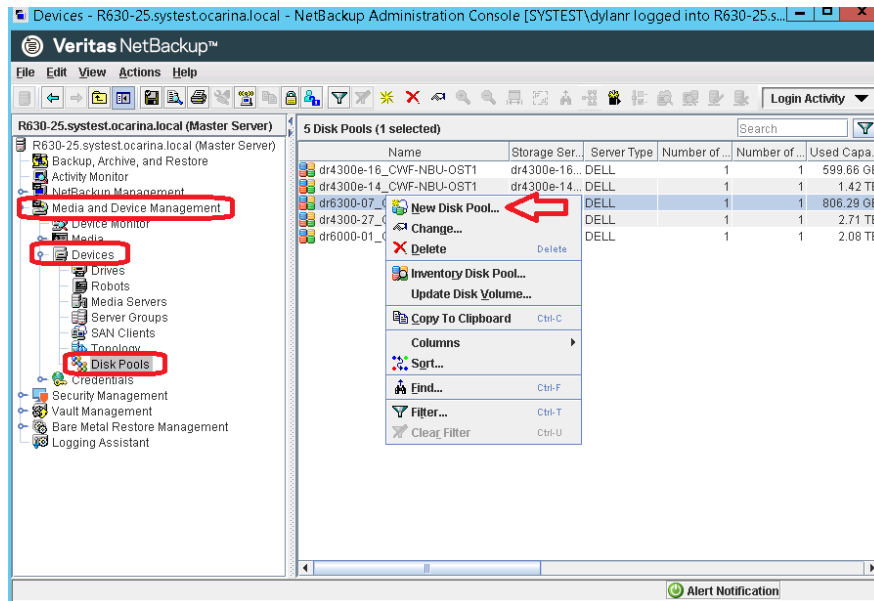


- 6 On the next screen the storage server will be created and added to the list of storage servers. Uncheck the **Create a disk pool using the storage server that you have just created** check box and then click **Close**.

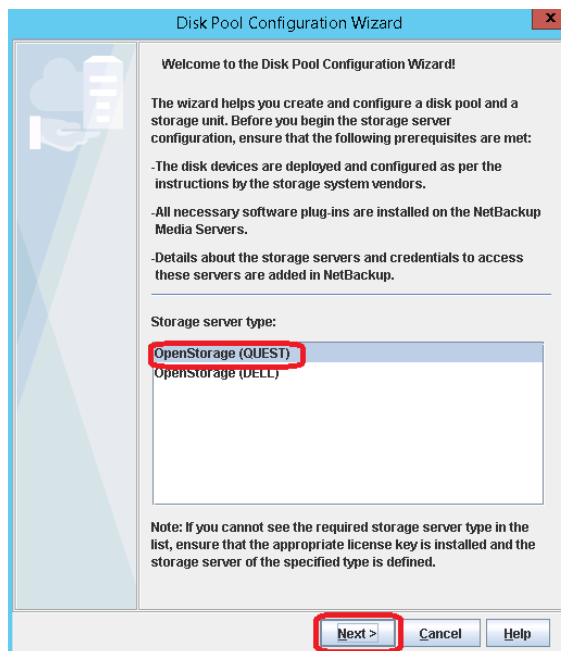


Creating a Disk Pool

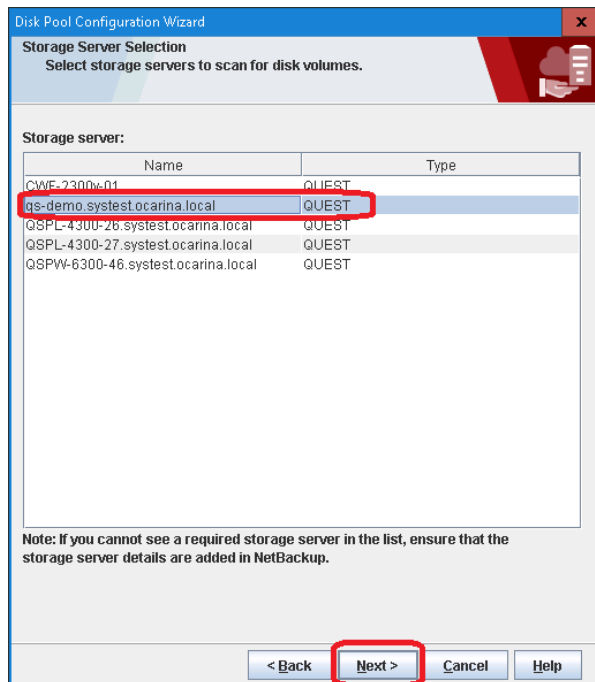
1. Launch the NetBackup administration console. Expand the **Media and Device Management** section followed by the **Devices** section. Select **Disk Pools** from the right hand side menu and right click anywhere in the **Disk Pools** panel on the right side of the screen. Click **New Disk Pool...**



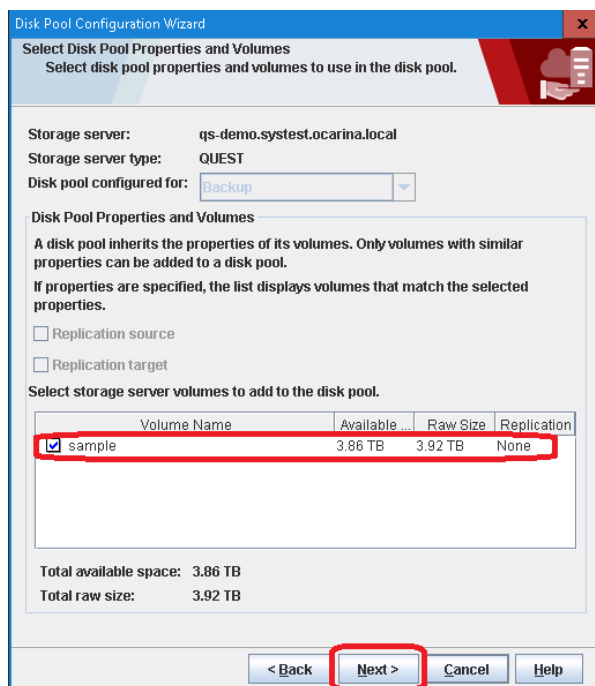
- In the DiskPool Configuration Wizard make sure the Storage server type is set to the OpenStorage (QUEST) option. Click Next



- Select the QoreStor Storage Server then click Next.



4. In **Select storage server volumes to add to the disk pool**, select the OST container or containers created in previous steps.



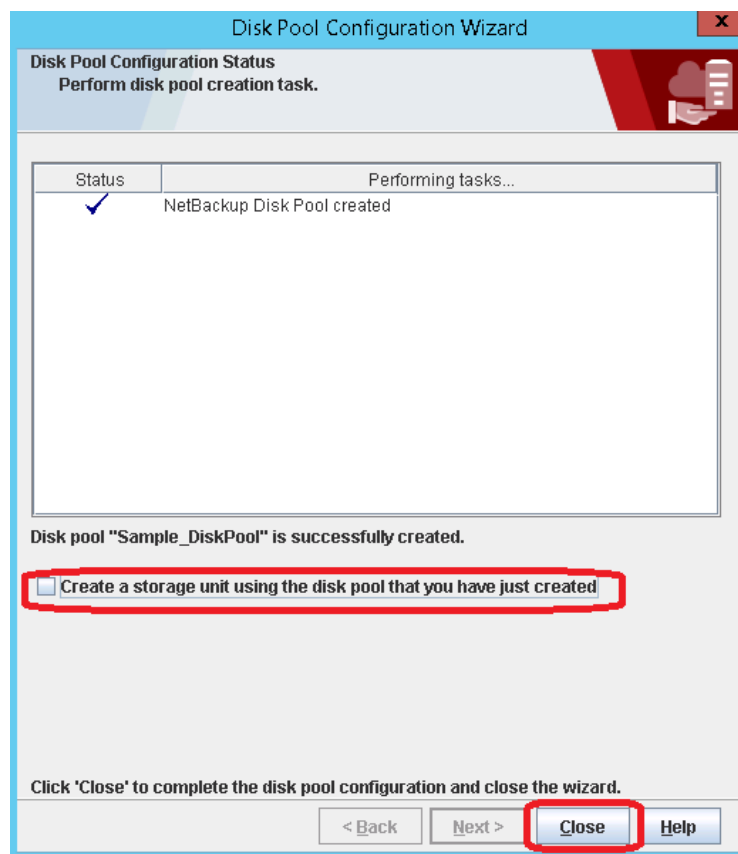
5. In the Disk Pool name field add an appropriate name for this Disk pool then click Next

The screenshot shows the 'Additional Disk Pool Information' step of the Disk Pool Configuration Wizard. The 'Disk Pool name' field is highlighted with a red box and contains the text 'Sample_DiskPool'. The 'Next >' button at the bottom is also highlighted with a red box. Other fields include 'Storage server: qs-demo.systest.ocarina.local', 'Storage server type: QUEST', 'Disk pool configured for: Backup', 'Disk Pool Size' (Total available space: 3.86 TB, Total raw size: 3.92 TB), 'Comments', 'High water mark: 98%', 'Low water mark: 80%', and 'Maximum I/O Streams' (Limit I/O streams: 1 per volume).

6. On the next screen verify the details are correct and click **Next**.

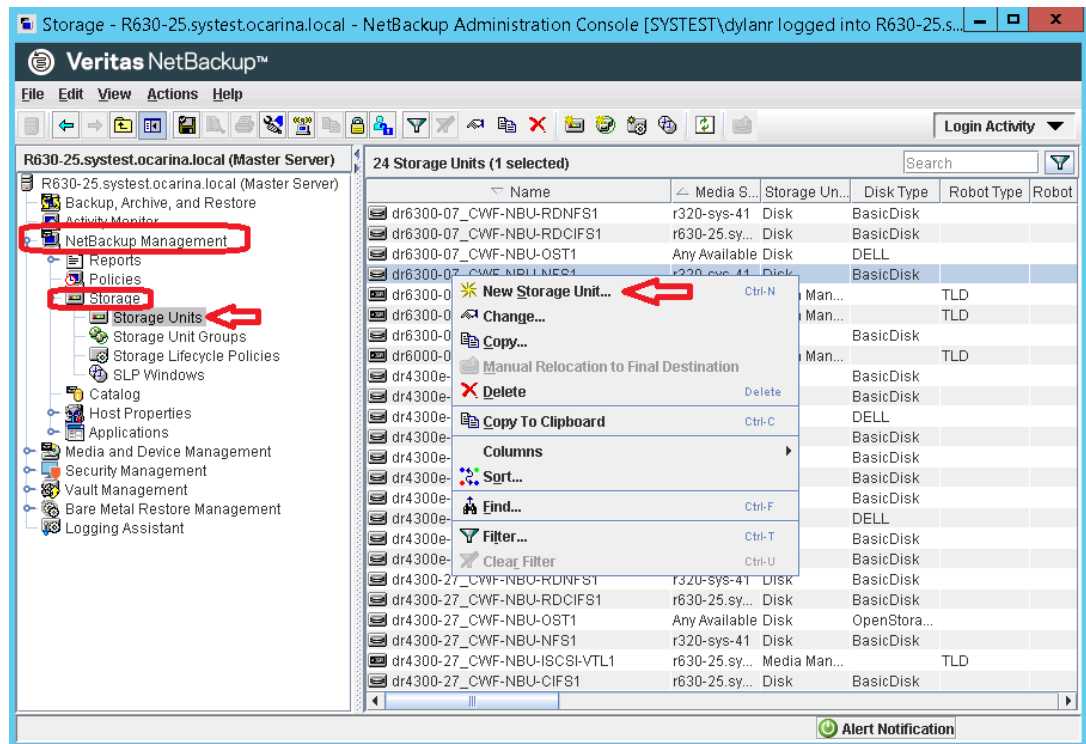
The screenshot shows the 'Disk Pool Configuration Summary' step of the Disk Pool Configuration Wizard. The 'Next >' button at the bottom is highlighted with a red box. The summary lists the following details: 'Storage server: qs-demo.systest.ocarina.local', 'Storage server type: QUEST', 'Volumes: sample', 'Disk Pool Details: Sample_DiskPool', 'Configured for snapshots: false', 'Replication: None', 'High water mark: 98', 'Low water mark: 80', 'Maximum I/O Streams: Unlimited', and 'Comments:'. The 'Next >' button is highlighted with a red box.

7. On the next screen the **Disk Pool** will be created. Clear the **Create a storage unit using the disk pool that you have just created** option and click **Close**.



Create a Storage Unit

1. Launch the NetBackup administration console. Expand the **NetBackup Management** section followed by the **Storage** section. Select **Storage Units** from the right hand side menu and right click anywhere in the **Storage Units** panel on the right side of the screen. Click **New Storage Unit...**



2. Add a name in the **Storage unit name** field. In the **Storage unit type** drop down, select **Disk**, then in the **Disk Type** drop down select **OpenStorage (Quest)**. In the **Select disk pool** drop down select the Disk pool created in previous steps. Modify the **Maximum concurrent jobs** field as desired. Click **OK**.

New Storage Unit

Storage unit name: Sample_Storage_Unit

Storage unit type: Disk ☐ On demand only

Disk type: OpenStorage (QUEST)

Properties and Server Selection

Storage unit configured for: Backup

A storage unit inherits the properties of its disk pool. If properties are specified, only those disk pools that match the specified properties will be available below.

☐ Replication source
☐ Replication target

Select disk pool: Sample_DiskPool [View Properties](#)

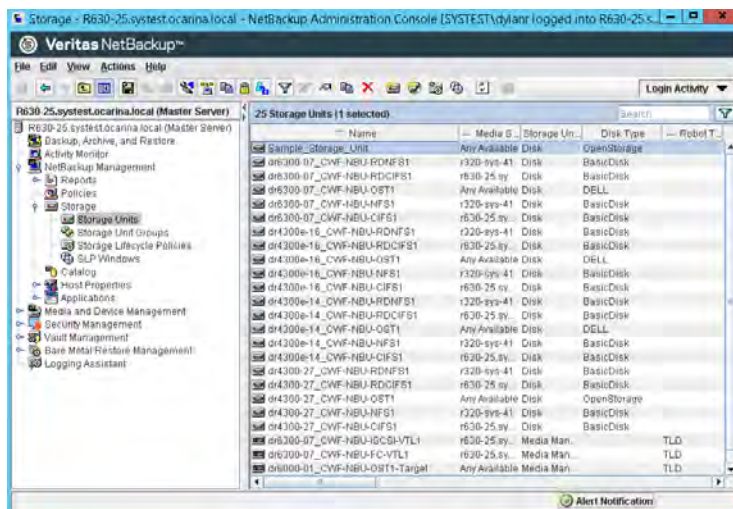
Media server:
☒ Use any available media server
☐ Only use the following media servers

Media Servers
☐ r630-25.systest.ocarina.local

Maximum concurrent jobs: 20
Maximum fragment size: 524288 Megabytes

[OK](#) [Cancel](#) [Help](#)

- The storage unit should now be seen on the **Storage Unit** panel



NOTE: Please review the *QoreStor Interoperability Guide* for the supported maximum number of connections.

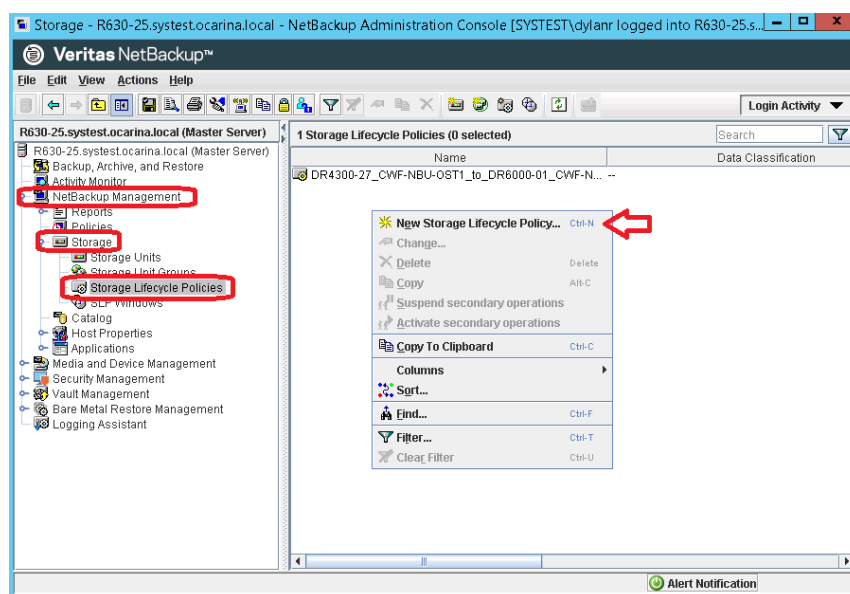
To change this number later at any time, go to the **Storage Units** panel, right click the storage unit, and select **Change...**

Configuring OST Optimized Duplication using a Storage Lifecycle Policy

Optimized Duplication is a way of duplicating or replicating OST backup images from one QoreStor system to another. In this duplication process only unique data is sent. This causes increased duplication performance while sending less data between the two QS system. This is achieved in NetBackup by configuring Storage Lifecycle Policy(SLP) which are, in effect, devices you can point backup jobs to. All backup jobs pointed to a SLP will write to a chain of storage units defined inside the SLP.

In the following example we will create a Storage Lifecycle Policy to duplicate jobs between two independent QoreStor systems. Before this example each QoreStor system will need separate Storage Units created in NetBackup. Follow the pervious section for each system to configure those storage units.

1. Launch the NetBackup administration console. Expand the **NetBackup Management** section followed by the **Storage** section. Select **Storage Lifecycle Policies** from the right hand side menu and right click anywhere in the **Storage Lifecycle Policies** panel on the right side of the screen. Click **New Storage Lifecycle Policy...**



- 1 In the **Storage lifecycle policy name** field create a name for the policy. This is, in effect, the device name you select when configuring a backup policy. Then click **Add...**

- 2 In the **Operation** drop down, select **Backup**. In the **Destination Storage** drop down select the desired **Storage Unit**. This will be the unit that the traditional backup will occur to. In the **Retention period** section select the desired backup retention. Click **OK**.

- 3 On the **New Storage Lifecycle Policy** page, click **Add...**

New Storage Lifecycle Policy

Storage Lifecycle Policy | Validation Report

Storage lifecycle policy name: Data classification: Priority for secondary operations: (higher number is greater priority)

Operation	Window	Target Master	Storage	Volume Pool	Media Owner	Retention Ty...	Retention P...	Alternate Re...	Preserve m...
Backup	--	--	Sample...	--	--	Fixed	2 weeks	--	No

Buttons: **Add...** (highlighted), Change, Remove

State of secondary operation processing: ☒ Active, ☐ Postponed

Until:

To find impact on Policies associated with this SLP due to change in configuration click here.

[Validate Across Backup Policies](#)

Buttons: OK, Cancel, Help

- In the **Operation** drop down, select **Duplication**. In the **Destination Storage** drop down, select the desired Storage Unit. This will be the unit duplication/replication will occur to. In the **Retention period** section select the desired backup retention, note replication on both storage units can be different. Click **OK**.

New Operation

Properties | Window

Source storage: Sample_Storage_Unit (Backup)

Operation: **Duplication** (highlighted)

Destination Storage Attributes

Destination storage: **Sample_Storage_Unit** (highlighted)

Volume pool:

Media owner:

Retention

Retention type:

Retention period: **2 weeks (Retention Level 1)** (highlighted)

Duplication

Alternate read server:

☐ Preserve multiplexing

☐ Postpone creation of this copy until the source copy is about to expire

[Advanced](#)

Buttons: **OK** (highlighted), Cancel, Help



NOTE: Default behavior is to duplicate backup images between devices as soon as a backup job finishes. If duplication should only occur during specific windows of time, such as daytime, then that can be configured in the Window tab.

5. You should now see the operations in the order they are perform listed on the pervious screen.

New Storage Lifecycle Policy

Storage Lifecycle Policy | Validation Report

Storage lifecycle policy name: Sample_SLP

Data classification: <No data classificati... | Priority for secondary operations: 0 (higher number is greater priority)

Operation	Window	Target Master	Storage	Volume Pool	Media Owner	Retention Ty...	Retention P...	Alternate Re...	Pres...
Backup	--	--	Sample...	--	--	Fixed	2 weeks	--	No
Duplication	Default_24x...	--	Sample...	--	--	Fixed	2 weeks	--	No

Buttons: Add... Change Remove

State of secondary operation processing

☒ Active ☐ Postponed

☐ Until 7/26/17 2:51 PM

To find impact on Policies associated with this SLP due to change in configuration click here.

Validate Across Backup Policies

OK Cancel Help

- This process can be repeated to a chain or multiple chains of duplication. Once finished click **OK**.

New Storage Lifecycle Policy

Storage Lifecycle Policy | Validation Report

Storage lifecycle policy name:

Data classification:

Priority for secondary operations: (higher number is greater priority)

Operation	Window	Target Master	Storage	Volume Pool	Media Owner	Retention Ty...	Retention P...	Alternate Re...	Pr
Backup	--	--	Sample...	--	--	Fixed	2 weeks	--	No
Duplication	Default_24x...	--	dr4300-...	--	--	Fixed	2 weeks	--	No
Duplication	Default_24x...	--	dr4300e...	--	--	Fixed	2 weeks	--	No
Duplication	Default_24x...	--	dr4300e...	--	--	Fixed	2 weeks	--	No
Duplication	Default_24x...	--	Sample...	--	--	Fixed	2 weeks	--	No

↑ ↓ ← →

Add... Change Remove

State of secondary operation processing

☒ Active

☐ Postponed

☐ Until

To find impact on Policies associated with this SLP due to change in configuration click here.

[Validate Across Backup Policies](#)

OK Cancel Help

Setting up the QoreStor Series system cleaner

Performing scheduled disk space reclamation operations are recommended as a method for recovering disk space from system containers in which files were deleted as a result of deduplication.

The system cleaner runs during idle time. If your workflow does not have a sufficient amount of idle time on a daily basis, then you should consider scheduling the cleaner to force it to run during a scheduled time. If necessary, you can perform the procedure shown in the following example screenshot to force the cleaner to run. After all of the backup jobs are set up, the QoreStor system cleaner can be scheduled. The QoreStor system cleaner should run at least 40 hours per week when backups are not taking place, and generally after a backup job has completed. Refer to the *QoreStor Series Cleaner Best Practices* white paper for guidance on setting up the cleaner.

- 1 In the QoreStor system GUI, Click the **System Configuration** tab then click **Edit Schedule**.

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

System Configuration

Operating System:	Red Hat Enterprise Linux Server release 7.1 (Maipo)	CLEANER STATUS	DONE	CURRENT SAVINGS	0 %	CAPACITY USED	0.00 GB	PHYSICAL CAPACITY	4242.32 GB
System State:	Operational Mode	TOTAL FILES	0	NUMBER OF CONTAINERS	1	NUMBER OF STORAGE GROUPS	1	DICTIONARY TYPE	CLOUD-OPTIMIZED
HostName:	qs-demo								
System ID:	4232F006789CC06E413356A5E29E58C8								
Version:	5.0.0.156								

Upload SSL Certificate

Cleaner Schedule

Run Cleaner Once Edit schedule

DAY	START TIME	END TIME
Monday	13:00	18:00
Tuesday	13:00	18:00
Wednesday	13:00	18:00
Thursday	13:00	18:00
Friday	13:00	18:00
Saturday	13:00	18:00
Sunday	13:00	18:00

- 2 Define the schedule and click **Submit**.

Cleaner Schedule

Cancel Submit

ACTION	DAY	START TIME	END TIME
Remove	Monday	06:00	18:00
Remove	Tuesday	06:00	18:00
Remove	Wednesday	06:00	18:00
Remove	Thursday	06:00	18:00
Remove	Friday	06:00	18:00
Remove	Saturday	06:00	18:00
Remove	Sunday	06:00	18:00

The new cleaner event is displayed on the **System Configuration** Tab.

System Configuration

Operating System:

Red Hat Enterprise Linux Server release 7.1 (Maipo)

CLEANER STATUS

DONE

CURRENT SAVINGS

0 %

CAPACITY USED

0.00 GB

PHYSICAL CAPACITY

4242.32 GB

System State:

Operational Mode

Host Name:

qs-demo

System ID:

4232F006789CC06E413356A5E29E58C8

Version:

5.0.0.156

TOTAL FILES

0

NUMBER OF CONTAINERS

1

NUMBER OF STORAGE GROUPS

1

DICTIONARY TYPE

CLOUD-OPTIMIZED

Upload SSL Certificate

Cleaner Schedule

Run Cleaner Once

Edit schedule

DAY	START TIME	END TIME
Monday	06:00	18:00
Tuesday	06:00	18:00
Wednesday	06:00	18:00
Thursday	06:00	18:00
Friday	06:00	18:00
Saturday	06:00	18:00
Sunday	06:00	18:00

Monitoring deduplication, compression and performance

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

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.

