Setting Up Quest® QoreStor™ with Veritas™ NetBackup™

Technical White Paper

Quest Engineering

August 2018

Patents

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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

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/

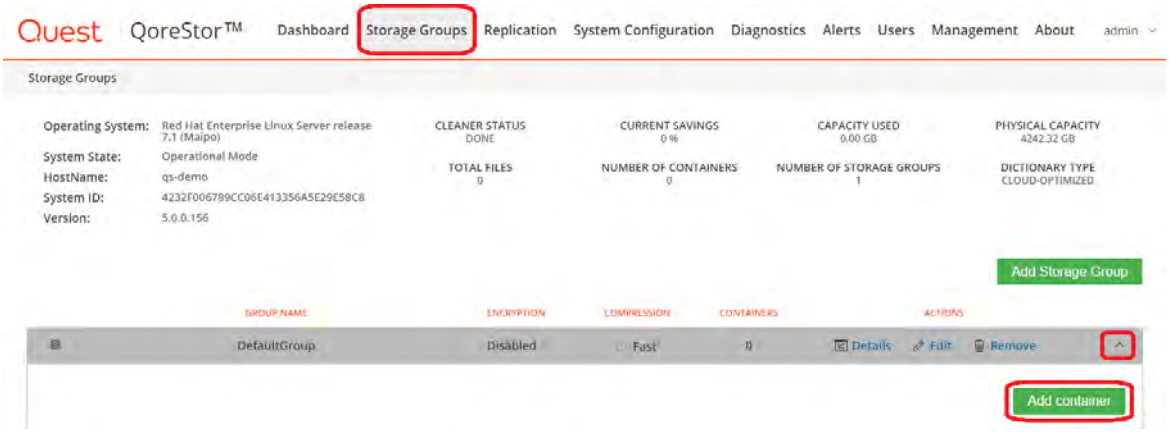
NOTE: The QoreStor/Veritas NetBackup build version and screenshots used for this paper may vary slightly, depending on the version of QoreStor/Veritas NetBackup software you are using.

1

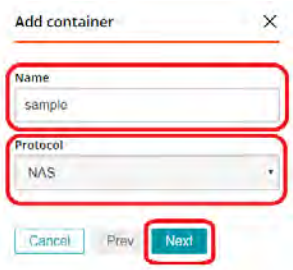
Configuring QoreStor as a CIFS/NFS storage unit

Creating a CIFS container for use with Veritas NetBackup

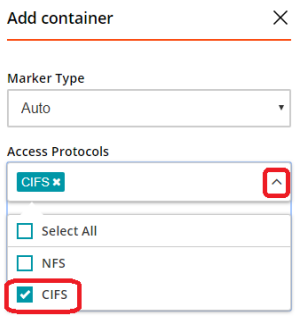
1 Select the **Storage Groups** tab, then expand the drop down for the storage group into which you would like to add the container. Click **Add container**.



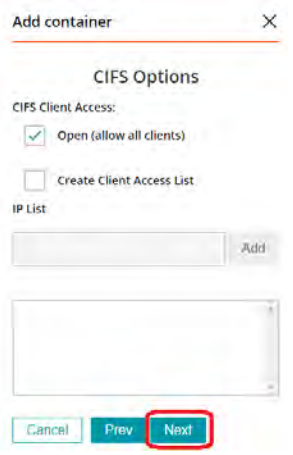
2 Enter a Container Name, and select **NAS** from the **Access Protocol** drop down menu. Then click **Next**.



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**.

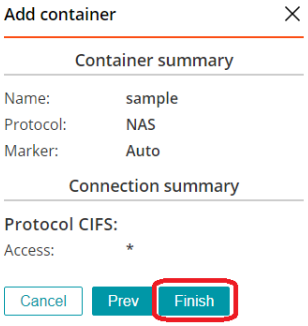


4 Fill in backup container information for CIFS options. Click **Next.**



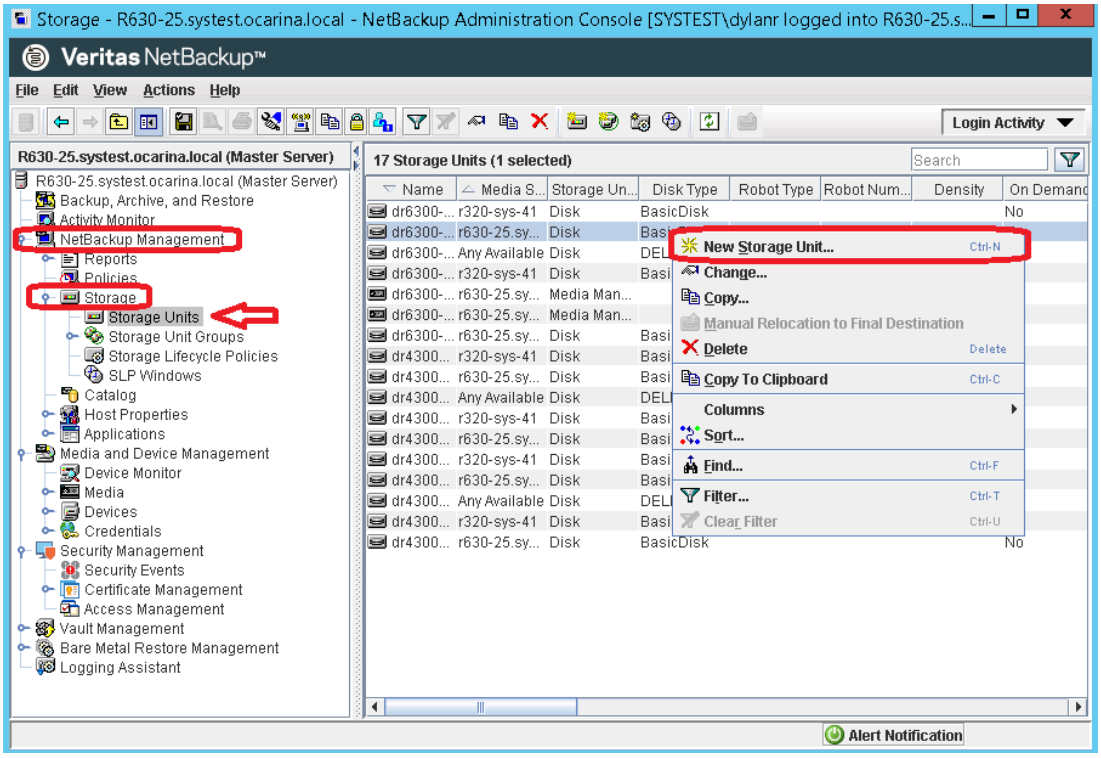
NOTE: For improved security, Quest recommends adding IP addresses for only NetBackup Media Servers

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

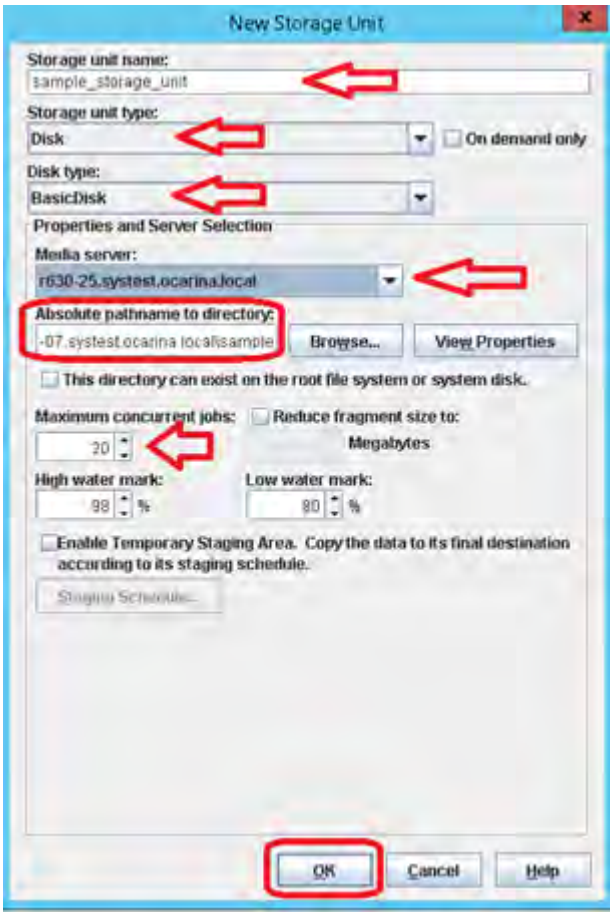


Adding the QoreStor CIFS container as a storage unit on NetBackup

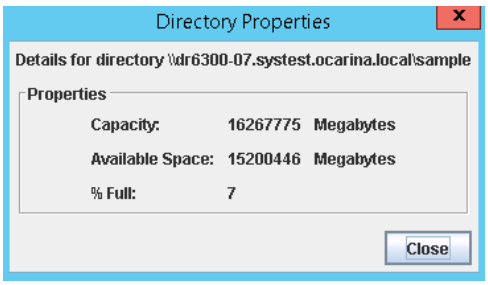
1 Open the NetBackup administration console. Expand **NetBackup Management** and **Storage**, then select **Storage Units**. Right-click anywhere in the right hand panel and select **New Storage Unit.**



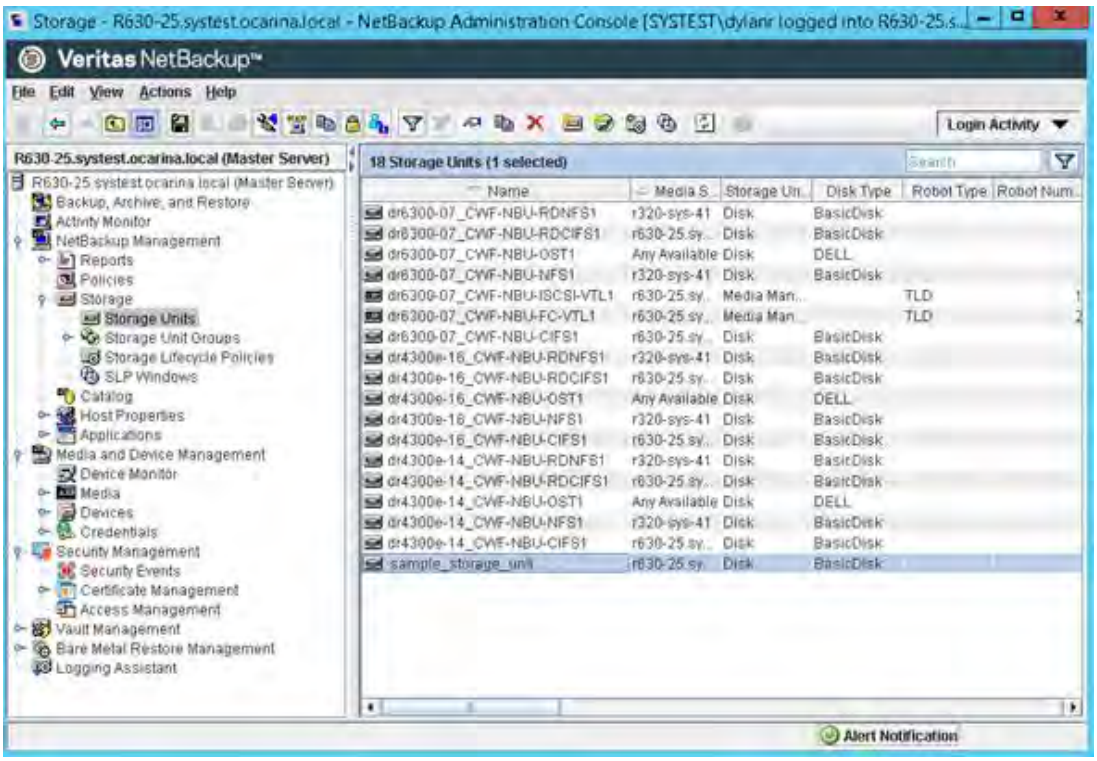
2 Add a Storage unit name for the device, then select the **Storage unit type** drop down and click **Disk**. Select the **Disk type** drop down and click **BasicDisk**. If needed, select the **Media server** drop down and pick the correct media server. In the **Absolute pathname** to directory field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



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.



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

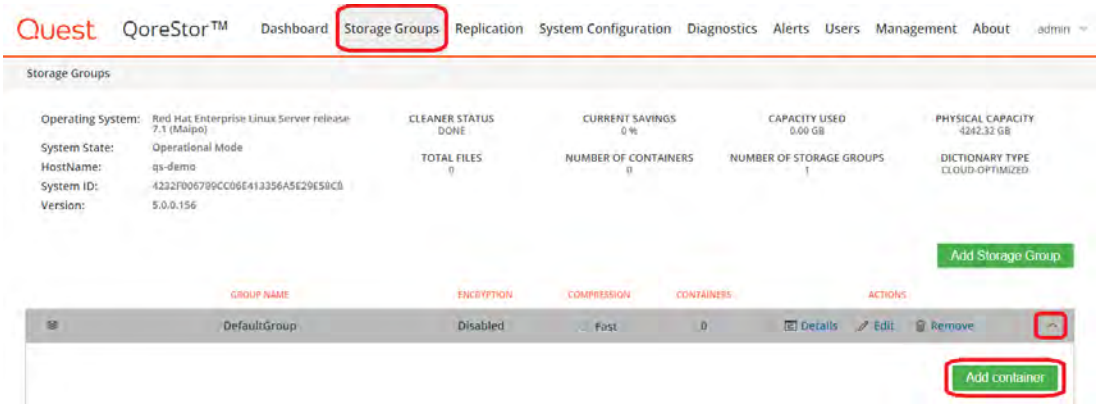


NOTE: Please review the *QoreStor Interoperability Guide* for the supported maximum number of connections.

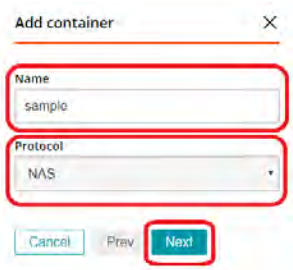
To change this number later at any time, go to the **Storage Units** panel, right click the storage unit, and select **Change…**

Creating a NFS container for use with Veritas NetBackup

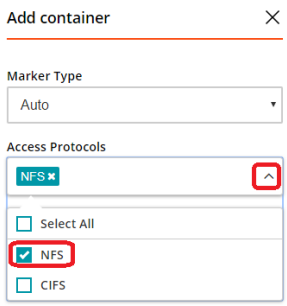
1 Select the **Storage Groups** tab, then expand the drop down for the storage group into which you would like to add the container. Click **Add container**.



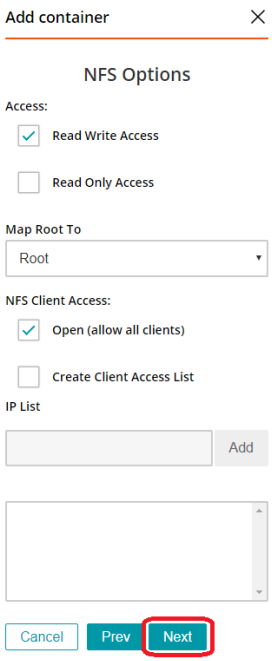
2 Enter a **Container** Name, and select **NAS** from the **Access Protocol** drop down menu. Then cqlick **Next**.



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

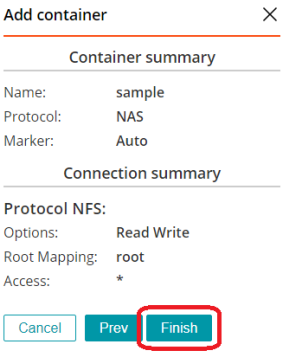


4 Fill in backup container information for **NFS options**, then click **Next.**



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 is added.

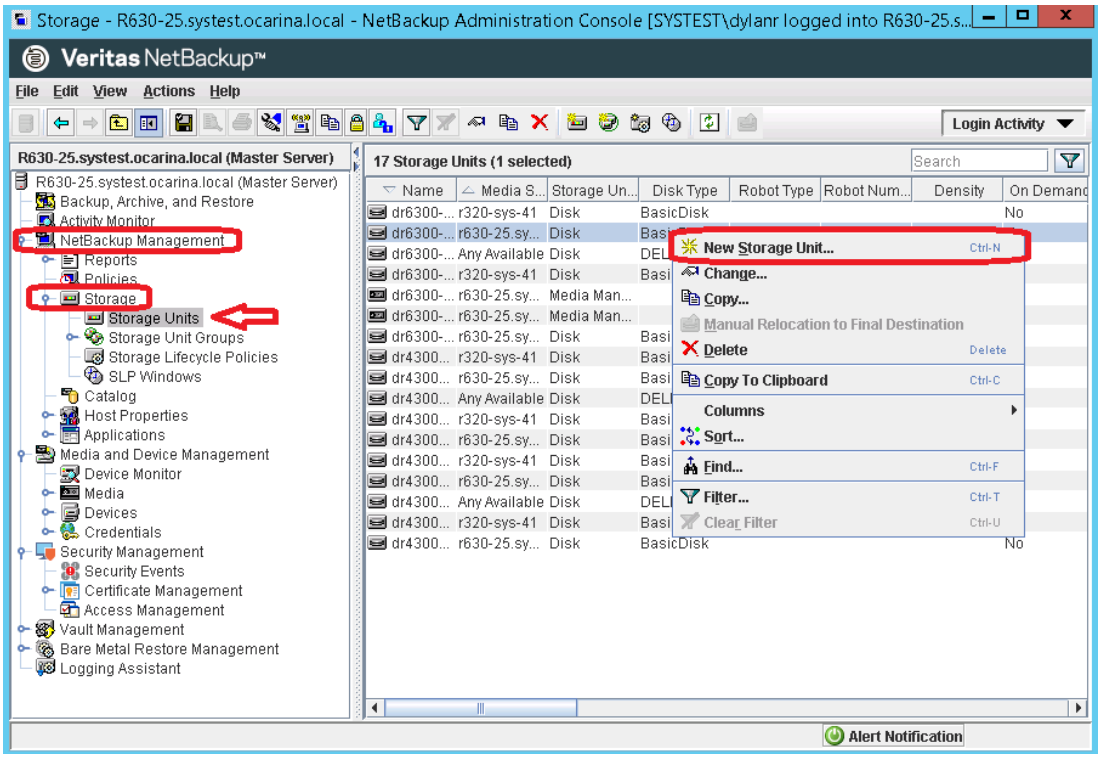


Adding the QoreStor NFS container as a storage unit on NetBackup

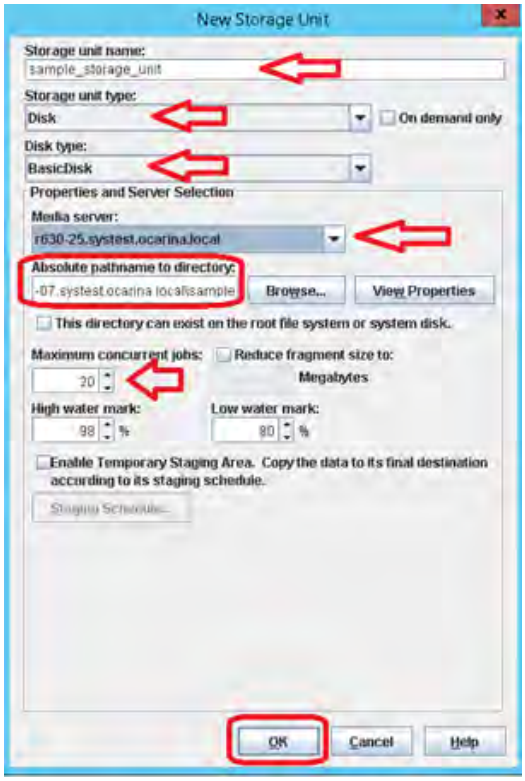
1 Mount the QoreStor NFS Container onto a Unix/Linux Media Server.

```
[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 ~]#
```

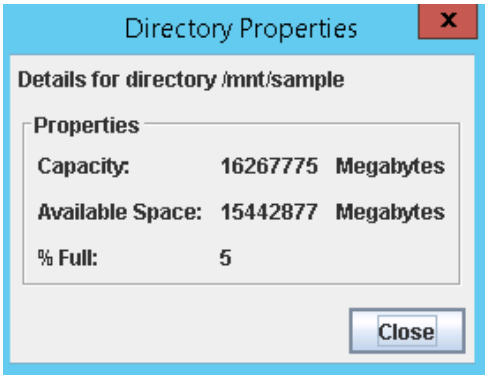
2 Open the NetBackup admiration console. Expand **NetBackup Management and Storage**, then select **Storage Units**. Right click anywhere in the right hand panel and select **New Storage Unit.**



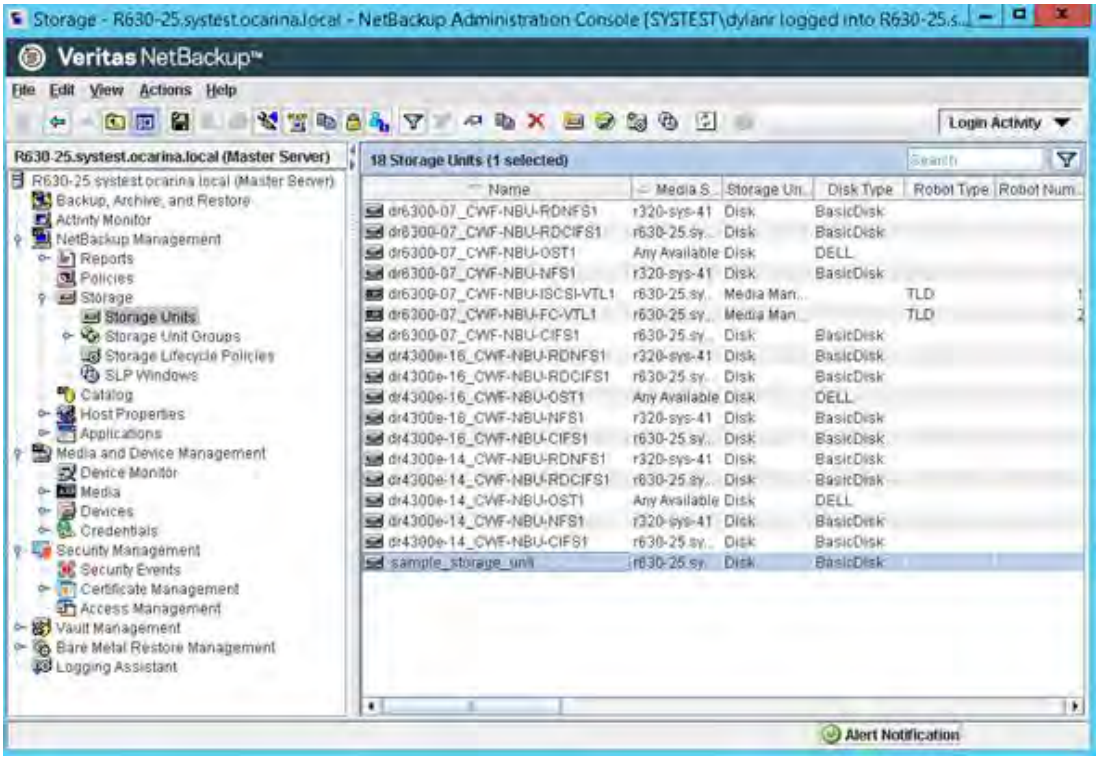
3 Add a Storage unit name for the device, then select the **Storage unit type** drop down and click **Disk**. Select the **Disk type** drop down and click **BasicDisk**. Select the **Media server** drop down and pick the correct media server if needed. In **Absolute pathname to directory**, put the mount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



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



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….**

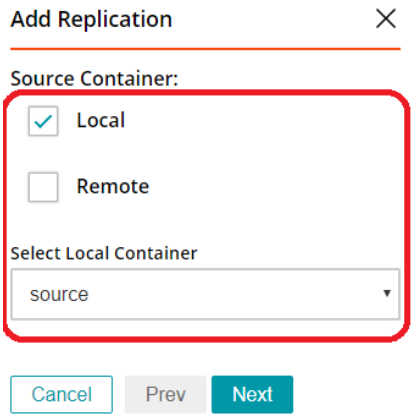
Setting up QoreStor replication

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.

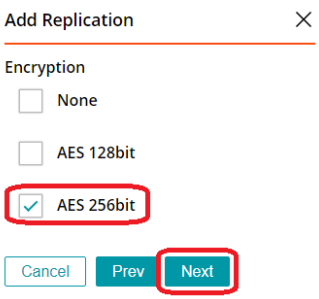
Creating a CIFS/NFS replication session

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**.

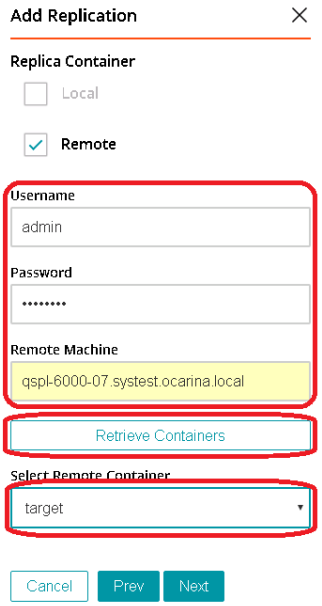
4. Select the source container for replication and click **Next**.



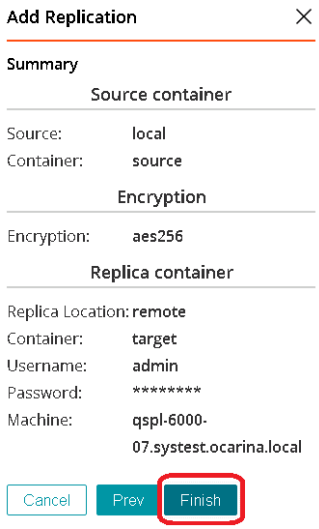
5. Select the **Encryption Type** for the source container. Click **Next**.



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



7. Verify the Summary and click **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

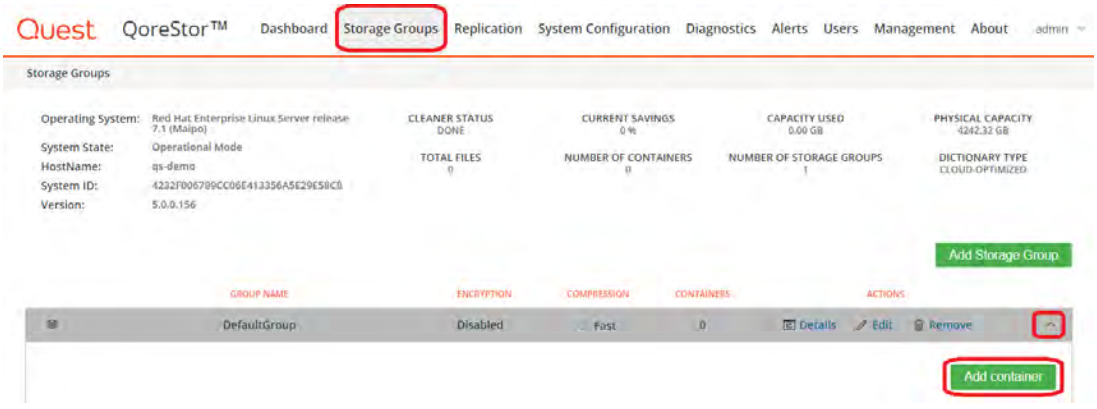
3

Configuring QoreStor as a OST storage unit

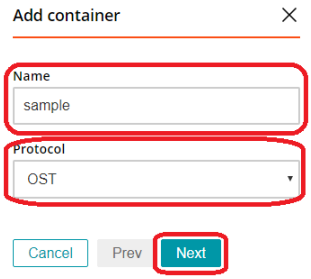
OpenStorage Technology is a protocol used by Veritas NetBackup to optimize backup jobs to deduplication storage devices. Using OST enables Media Servers to assist in the deduplication process often providing for decreased backup windows and increased performance. It also achieves network savings preventing 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

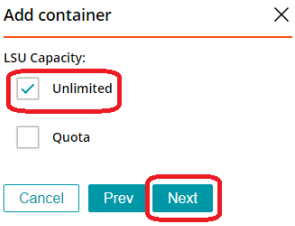
1 Select the **Storage Groups** tab, then expand the drop down you would like to add the container into. Click **Add container**.



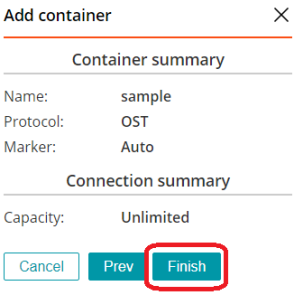
2 Under **Protocol** , select **OST**. Enter a **Container Name** and then click **Next**.



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



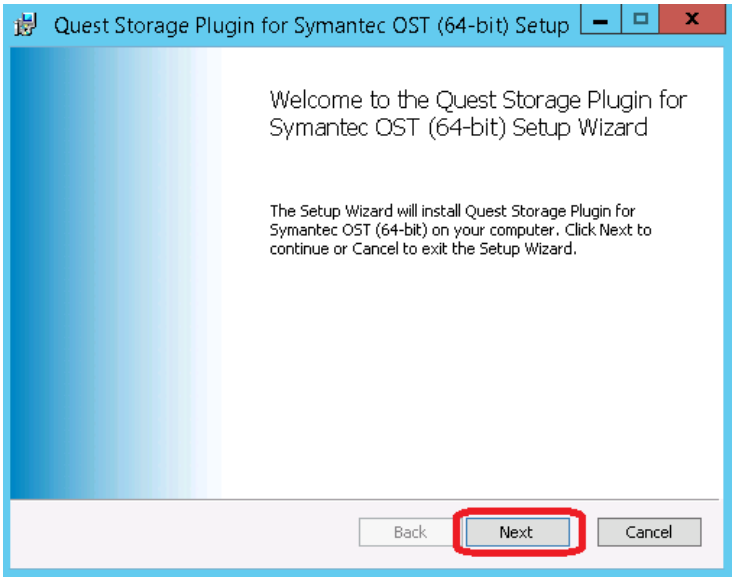
4 Review the configuration Summary page, and then click **Finish**.



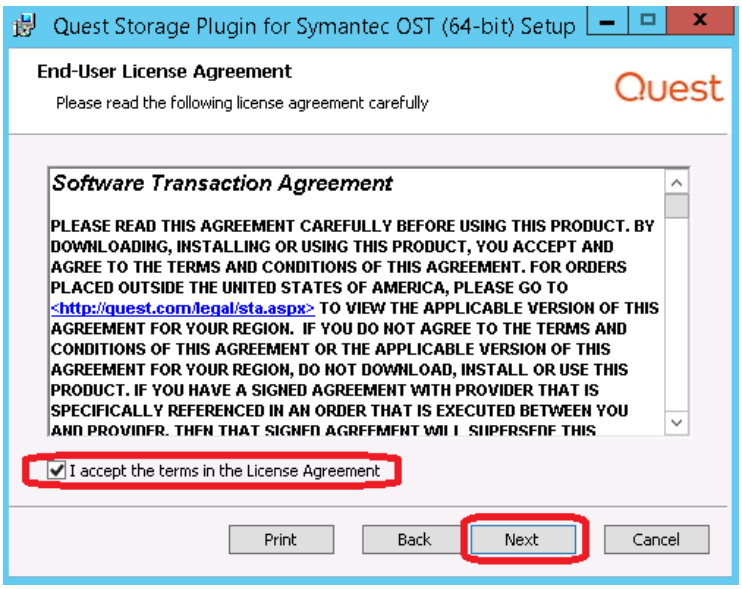
Installing the OST plugin

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.

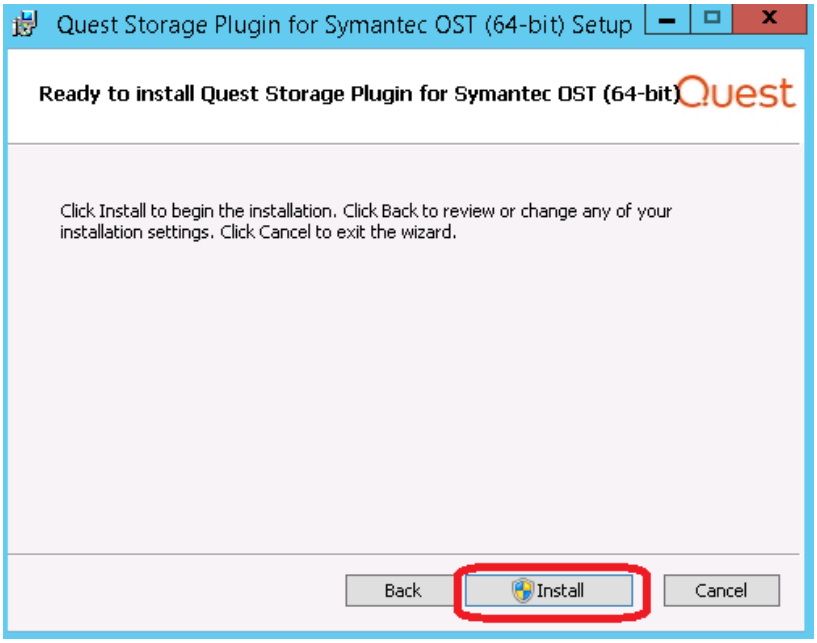
2 On the Setup Wizard Welcome page, click **Next**.



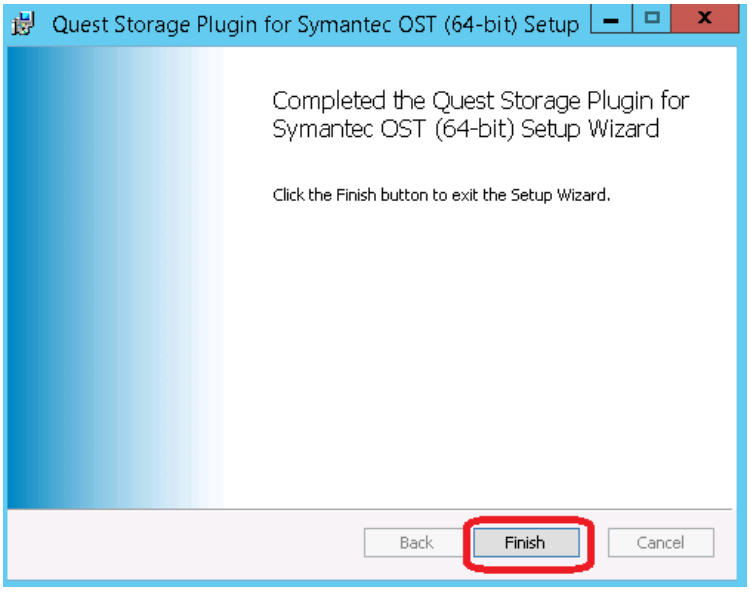
3 Accept the license agreement. Click **Next**.



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



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

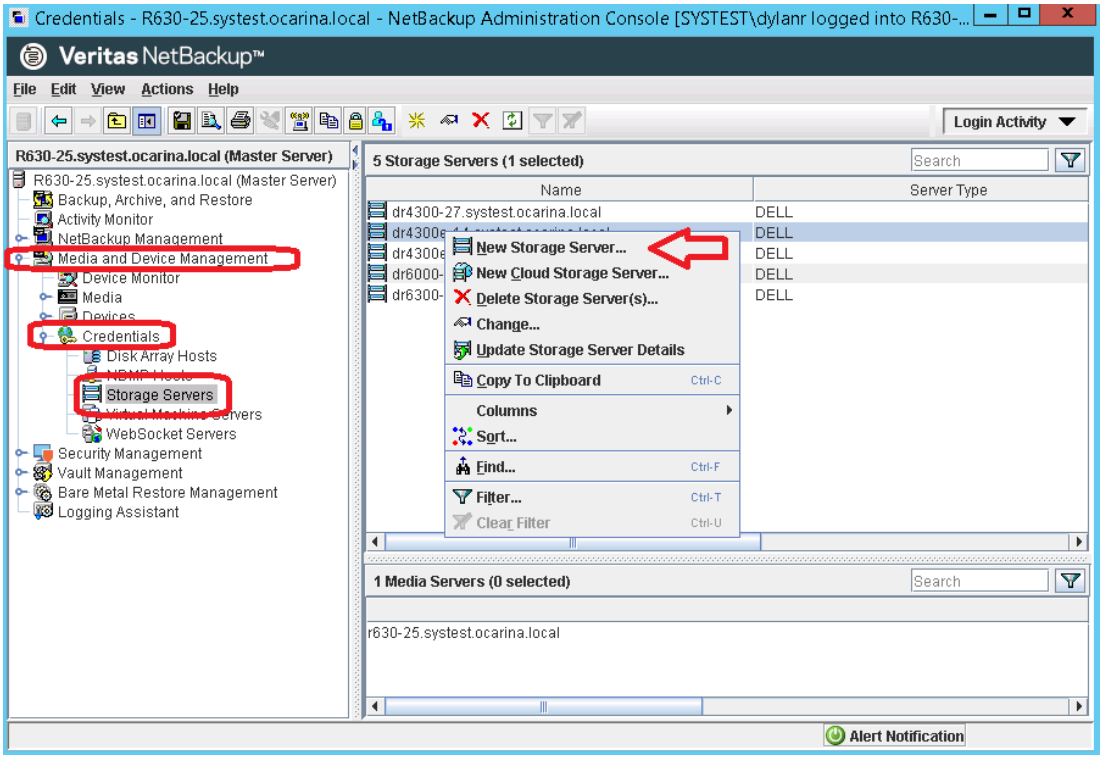


Configuring the OST device in Veritas Netbackup

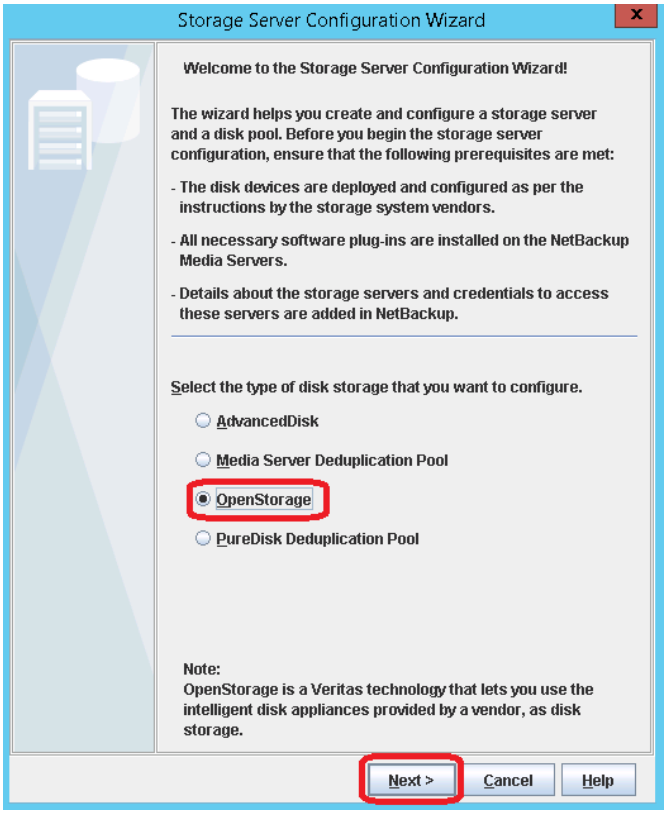
Creating an OST Storage Unit consists of three steps in Netbackup. First the QoreStor device will need to be added as a Storage Sever. Next a Disk Pool of one or more containers from a Storage Server will need to be added. Finally, a Storage Unit can be created from the containers added to the Disk Pool.

Adding QoreStor system as a Storage Server

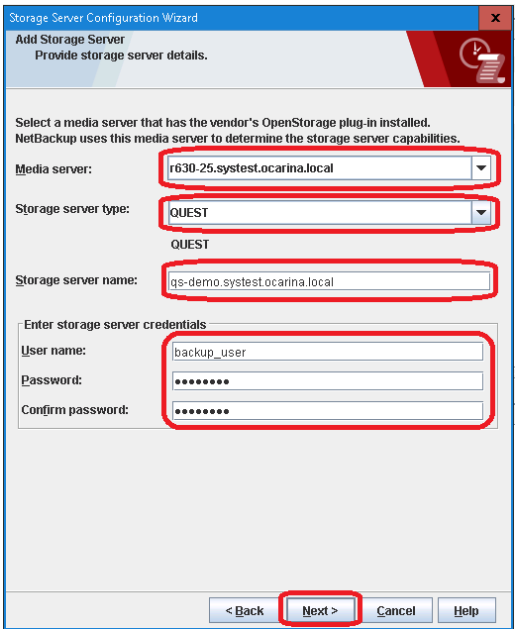
1 Launch the NetBackup administration console. Expand **Media and Device Management**, then **Credentials**. Select the **Storage Servers** section then right click anywhere in the storage servers panel on the right side of the screen. Click **New Storage Server…**.



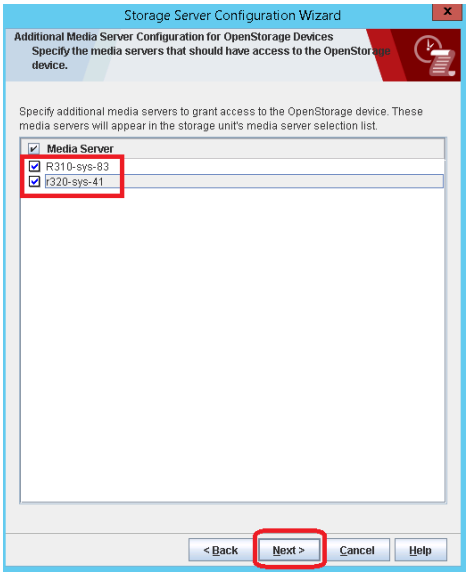
2 In the **Storage Server Configuration Wizard**, select the **OpenStorage** option and click **Next.**



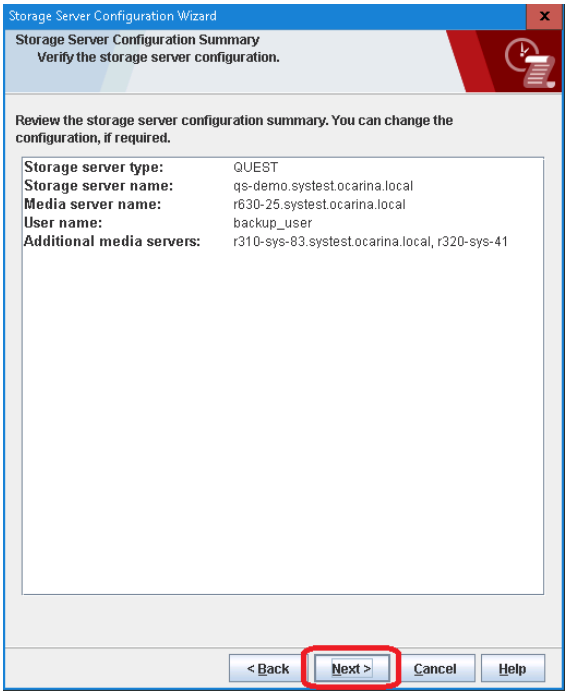
3 On the following screen select the **Media server** dropdown and select the appropriate media server if needed. Then in **Storage server type**, enter “QUEST” without quotation marks. **DO NOT click the Storage server type dropdown.** In the **Storage server name** field, add the fully qualified domain 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! .**



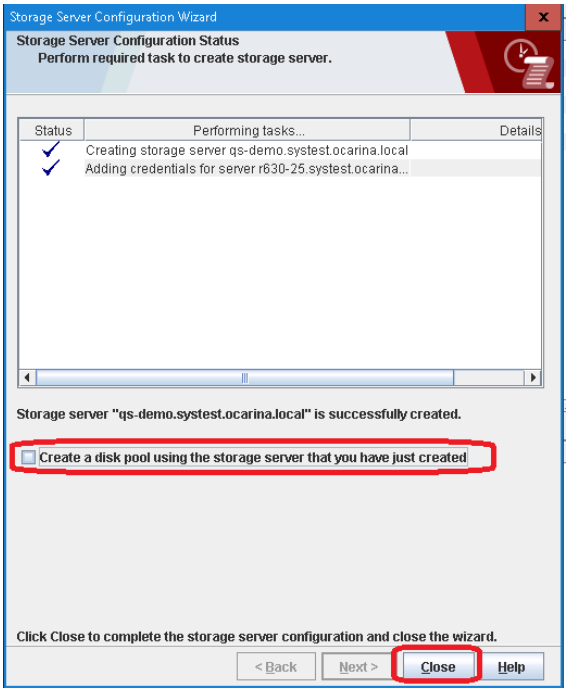
4 If additional Media Servers are available, you may select them for access now and click **Next**. If your environment only has one media server this screen will not show.



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

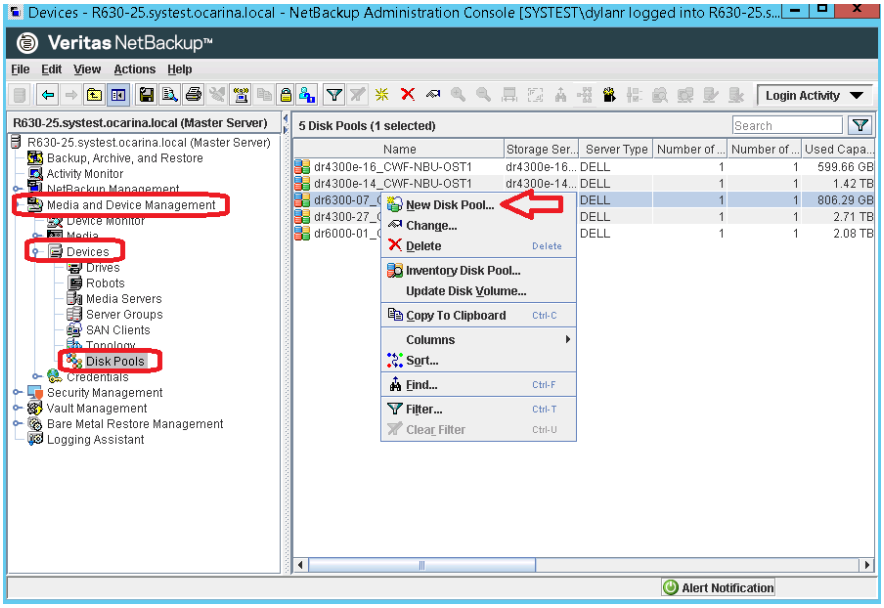


6 On the next screen the storage server will be created and added to the list of storage servers. Uncheck the **Create a disk pool using the storage server that you have just created** check box and then click **Close.**

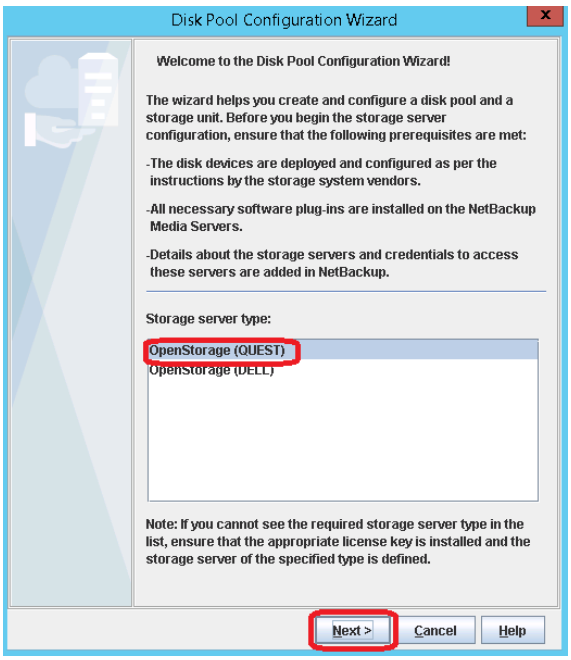


Creating a Disk Pool

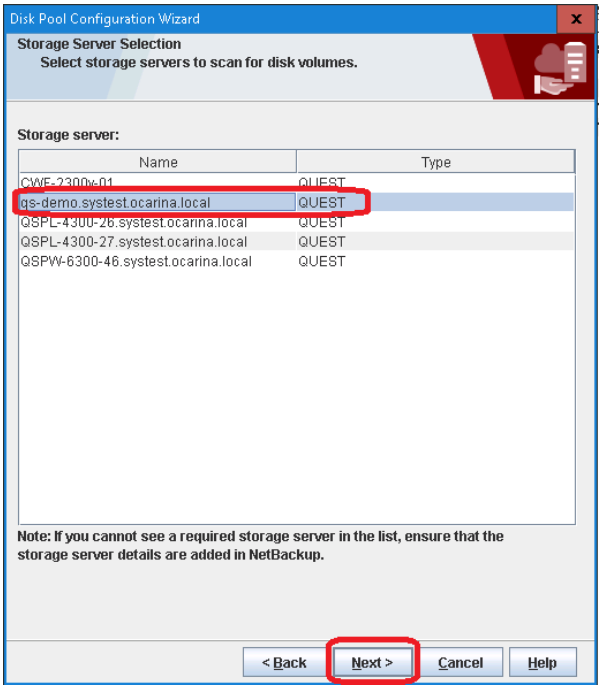
1. Launch the NetBackup administration console. Expand the **Media and Device Management** section followed by the **Devices** section. Select **Disk Pools** from the right hand side menu and right click anywhere in the **Disk Pools** panel on the right side of the screen. Click **New Disk Pool…**



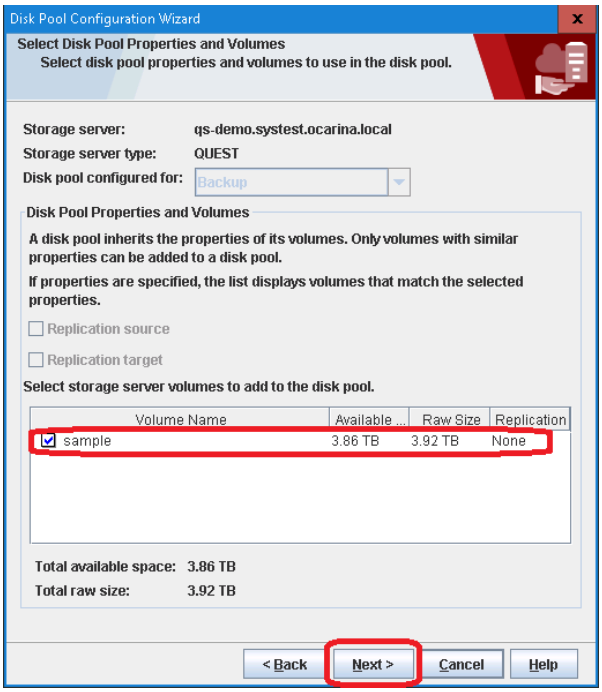
2. In the **DiskPool Configuration Wizard** make sure the Storage server type is set to the OpenStorage (QUEST) option. Click **Next**



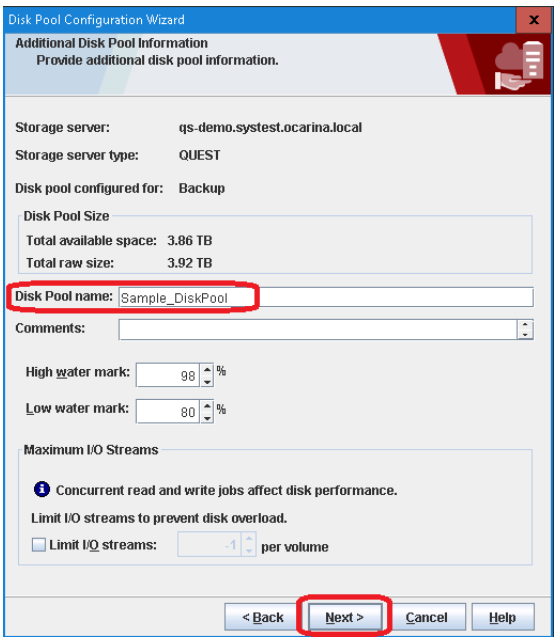
3. Select the **QoreStor Storage Server** then click **Next.**



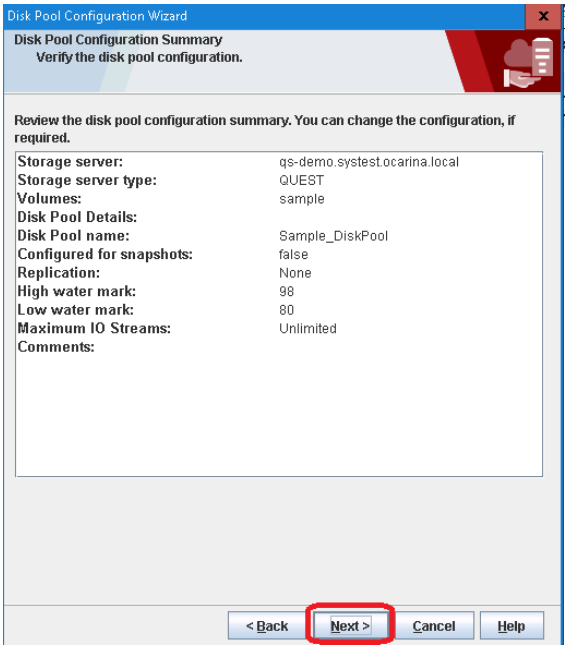
4. In **Select storage server volumes to add to the disk pool**, select the OST container or containers created in pervious steps.



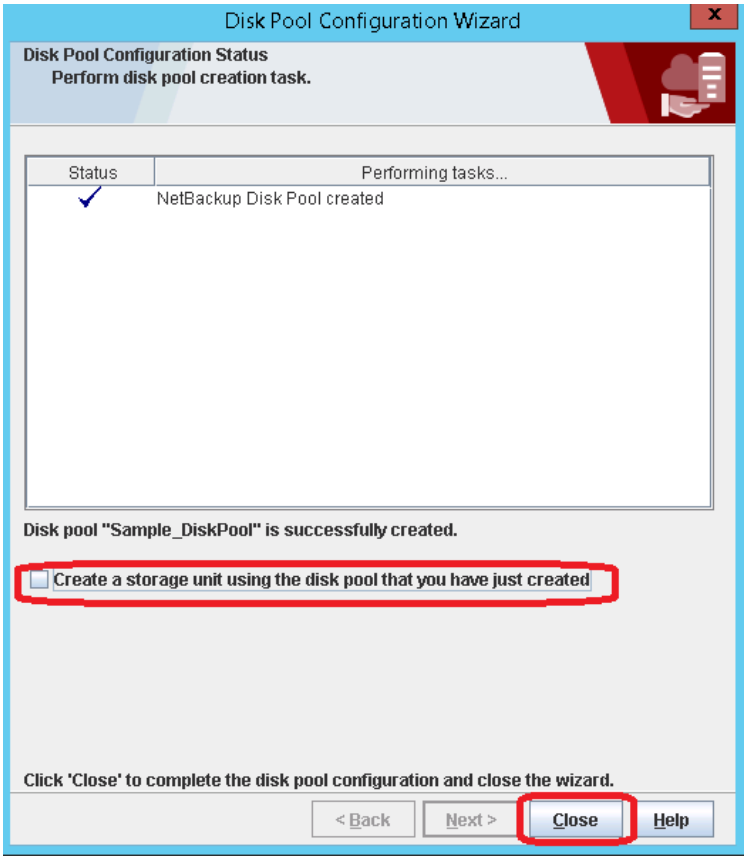
5. In the Disk Pool name field add an appropriate name for this Disk pool then click Next



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

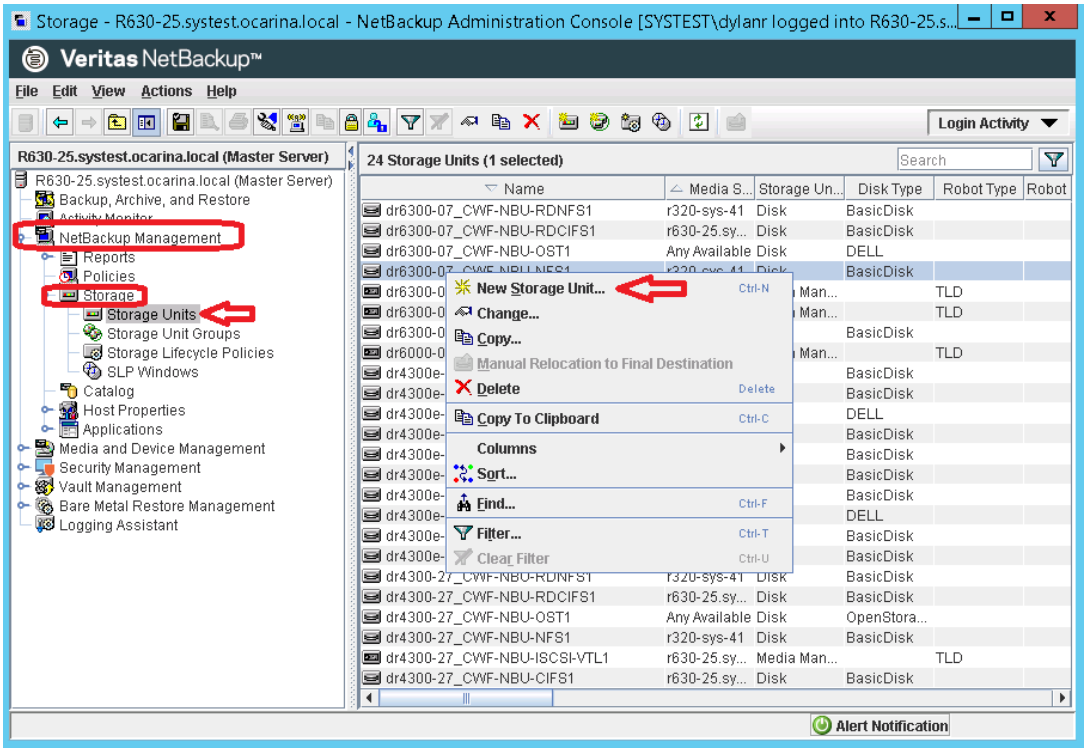


7. On the next screen the **Disk Pool** will be created. Clear the **Create a storage unit using the disk pool that you have just created option** and click **Close.**

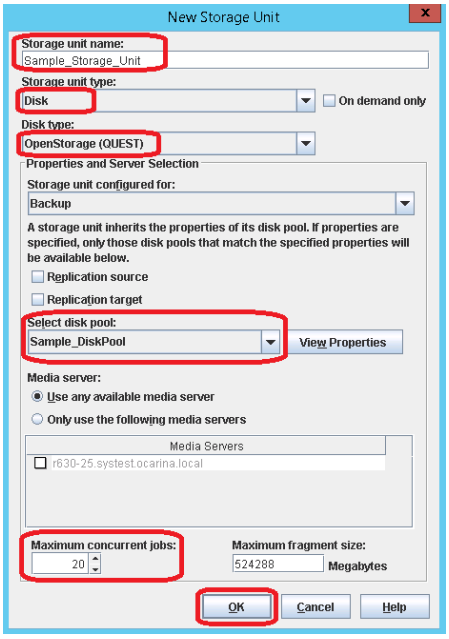


Create a Storage Unit

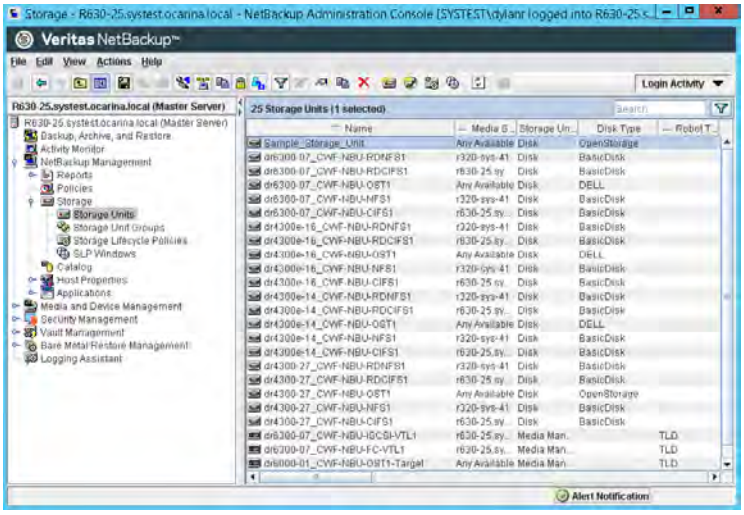
1. Launch the NetBackup administration console. Expand the **NetBackup Management** section followed by the **Storage** section. Select **Storage Units** from the right hand side menu and right click anywhere in the **Storage Units** panel on the right side of the screen. Click **New Storage Unit…**



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**.



3. 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.

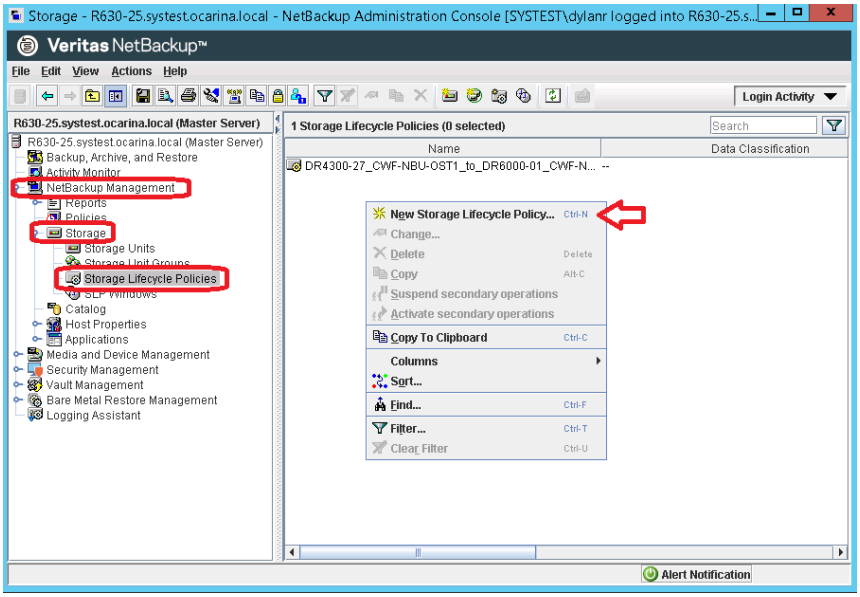
To change this number later at any time, go to the **Storage Units** panel, right click the storage unit, and select **Change…**

Configuring OST Optimized Duplication using a Storage Lifecycle Policy

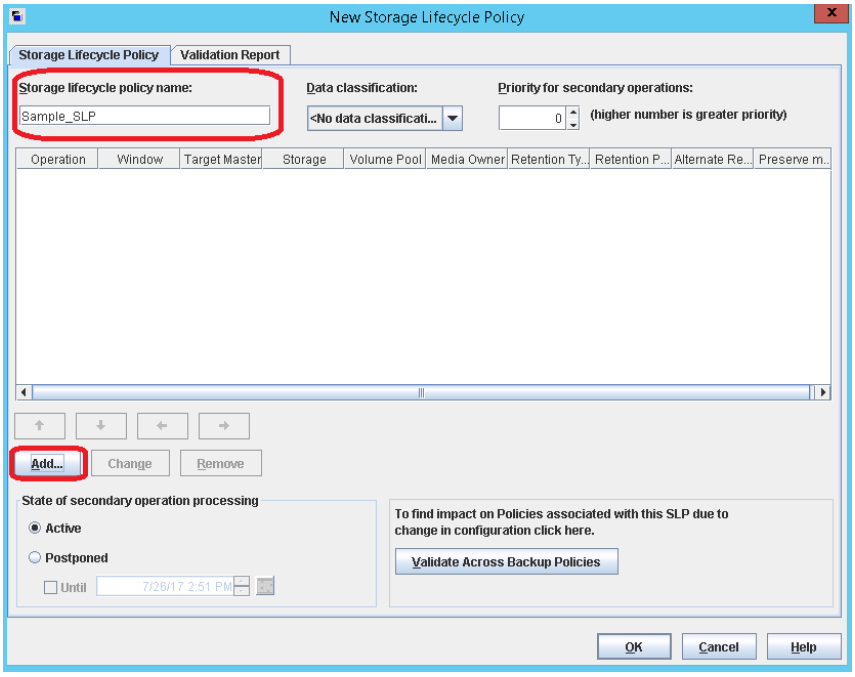
Optimized Duplication is a way of duplicating or replicating OST backup images from one QoreStor system to another. In this duplication process only unique data is sent. This causes increased duplication performance while sending less data between the two QS system. This is achieved in NetBackup by configuring 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.

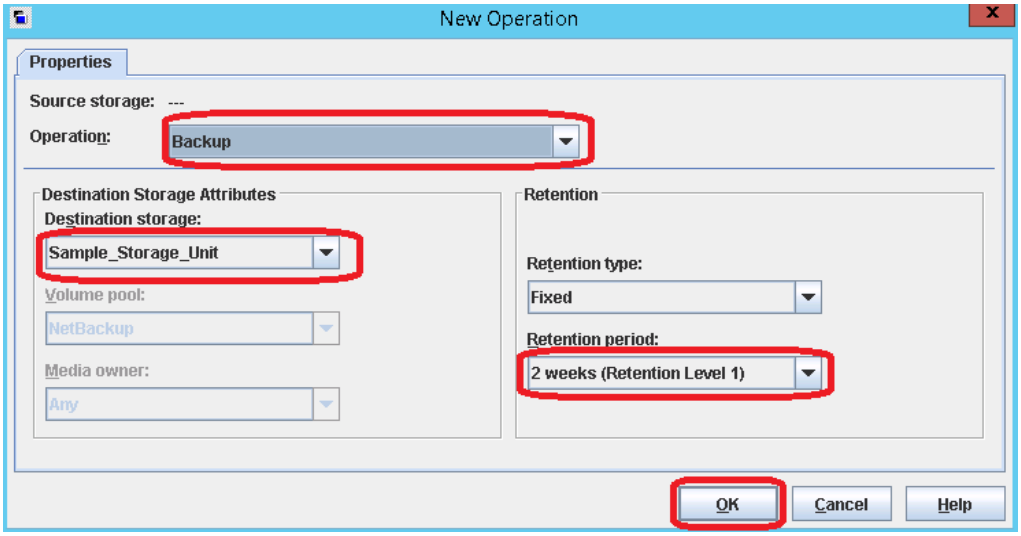
1. Launch the NetBackup administration console. Expand the **NetBackup Management** section followed by the **Storage** section. Select **Storage Lifecycle Policies** from the right hand side menu and right click anywhere in the **Storage Lifecycle Policies** panel on the right side of the screen. Click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



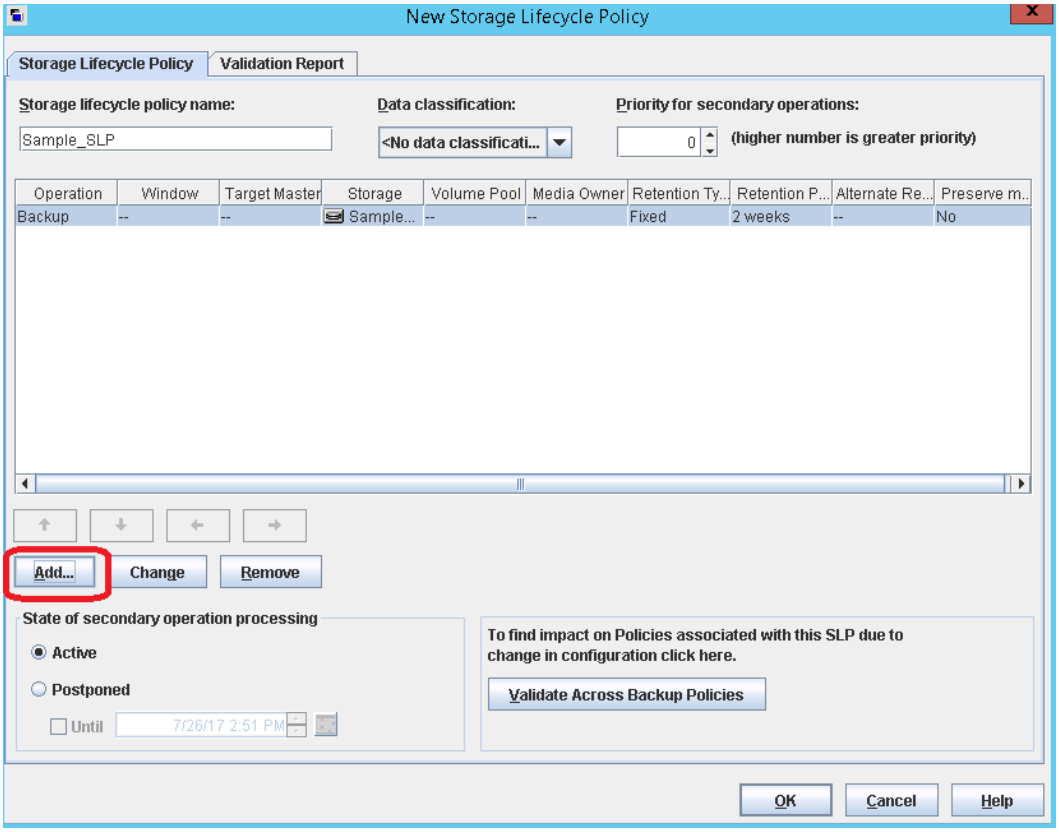
1 In the **Storage lifecycle policy name** field create a name for the policy. This is, in effect, the device name you select when configuring a backup policy. Then click **Add…**



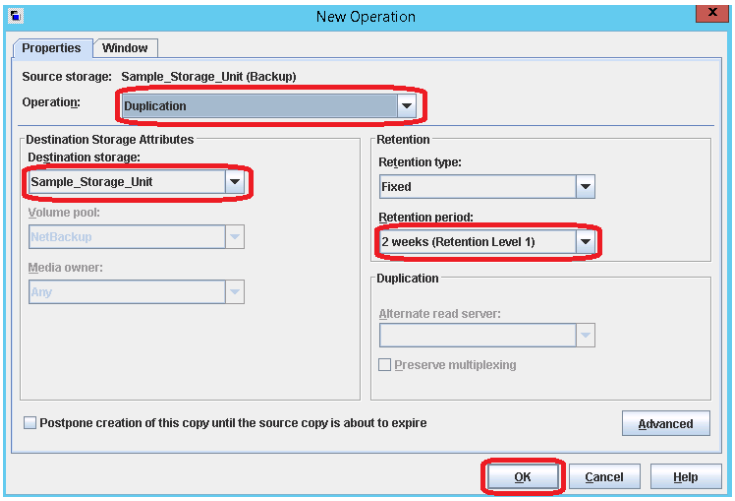
2. In the **Operation** drop down, select **Backup**. In the **Destination Storage** drop down select the desired **Storage Unit**. This will be the unit that the traditional backup will occur to. In the **Retention period** section select the desired backup retention. Click **OK.**



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

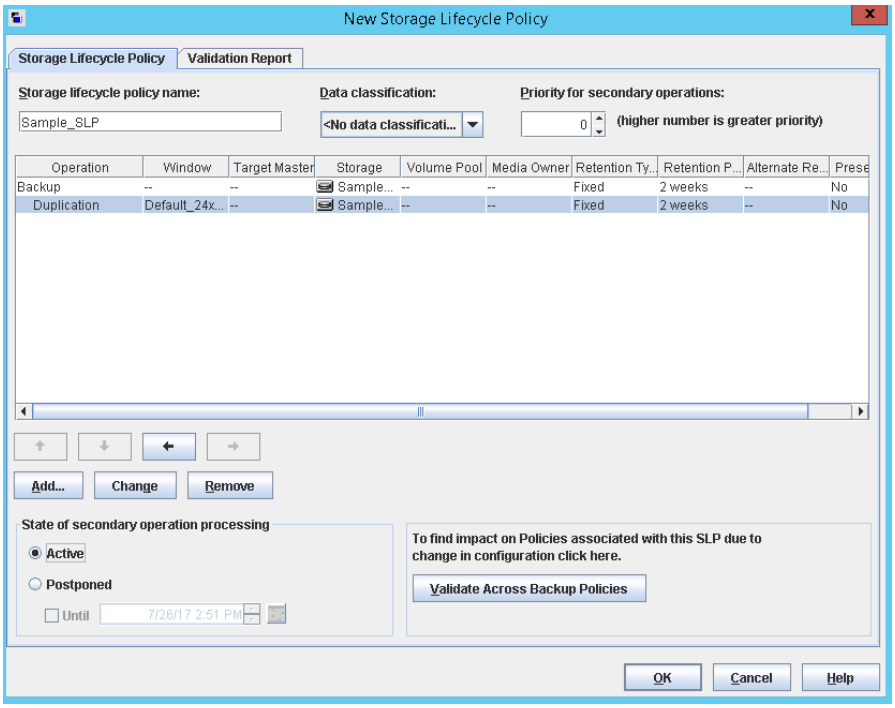


4. In the **Operation** drop down, select **Duplication**. In the **Destination Storage** drop down, select the desired Storage Unit. This will be the unit duplication/replication will occur to. In the **Retention period** section select the desired backup retention, note replication on both storage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

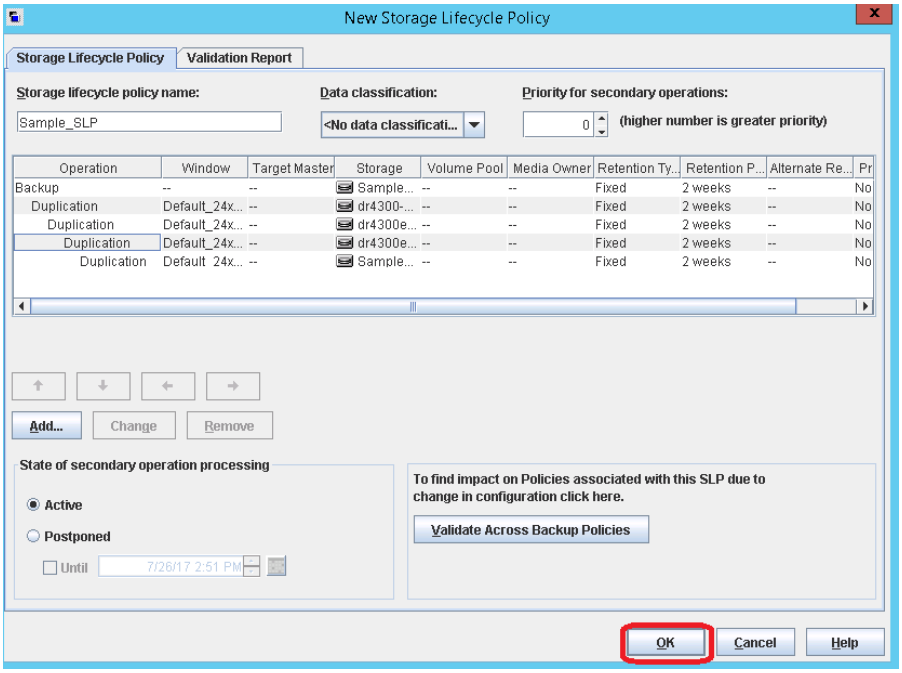


NOTE: Default behavior is to duplicate backup images between devices as soon as a backup job finishes. If duplication should only occur during specific windows of time, such as daytime, then that can be configured in the Window tab.

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



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



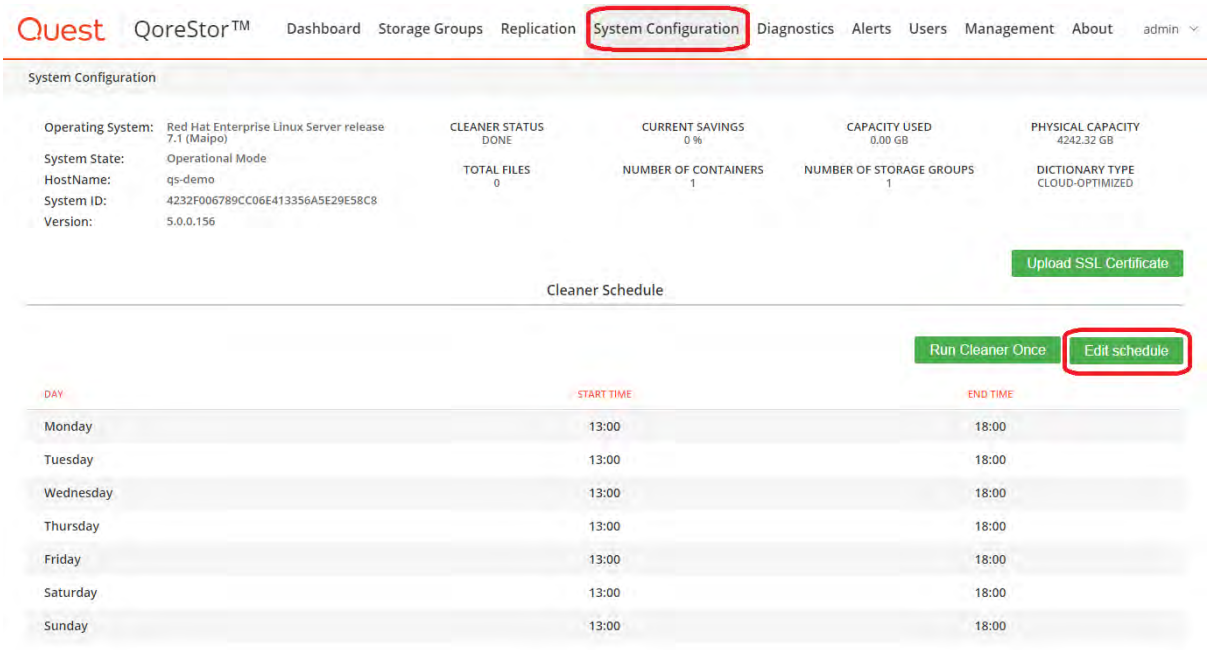
4

Setting up the QoreStor Series system cleaner

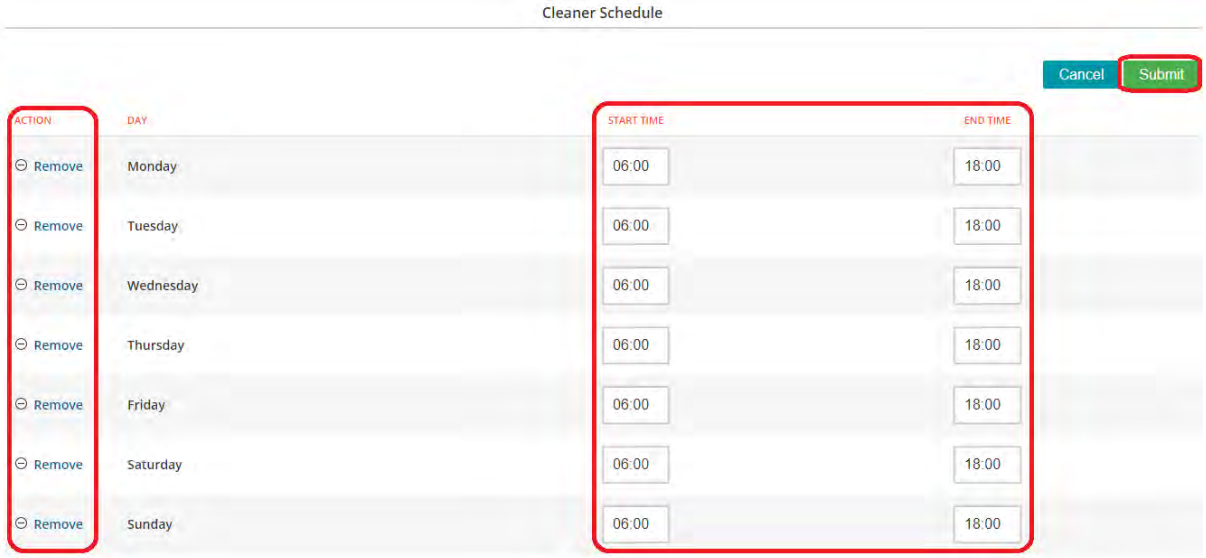
Performing scheduled disk space reclamation operations are recommended as a method for recovering disk space from system containers in which files were deleted as a result of deduplication.

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.

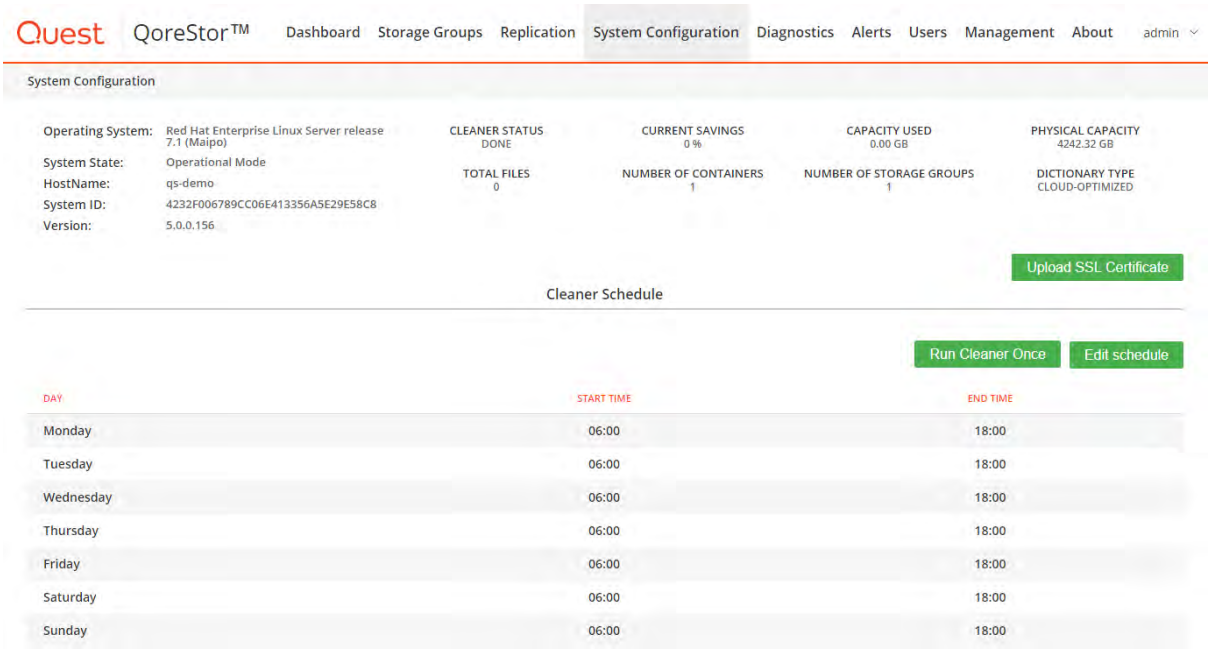
1 In the QoreStor system GUI, Click the **System Configuration** tab then click **Edit Schedule.**



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



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


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)
System State: Operational Mode
HostName: qs-demo
System ID: 4232F006789CC06E413356A5E29E58C8
Version: 5.0.0.156
CLEANER STATUS DONE
CURRENT SAVINGS 0 %
CAPACITY USED 0.00 GB
PHYSICAL CAPACITY 4242.32 GB
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

6

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.