

Setting up Quest® QoreStor™ as an OST
Backup Target for Veritas™ Backup Exec™

Technical White Paper

Quest Engineering

February 2023



© 2023 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>. 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 the property of their respective owners.

Legend

 **WARNING:** A WARNING icon indicates a potential for property damage, personal injury, or death

 **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 Backup Exec for

Updated – February 17, 2023

Contents

Installing and configuring QoreStor	5
Creating an OST container for Backup Exec.....	6
Creating an Object Container for Backup Exec	9
Installing the Quest OST Plugin	11
Adding the OST account to Backup Exec.....	13
Adding an OST container to Backup Exec.....	15
Adding an Object container to Backup Exec.....	20
Creating a policy driven Cloud Tier.....	24
Setting up the QoreStor cleaner.....	27
Monitoring deduplication, compression, and performance	29

Executive Summary

This white paper provides information about how to set up QoreStor as a backup target for Veritas Backup Exec. This document is a quick reference guide and does not include all QoreStor deployment best practices.

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

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

For more information about Veritas Backup Exec, refer to the Backup Exec documentation at:

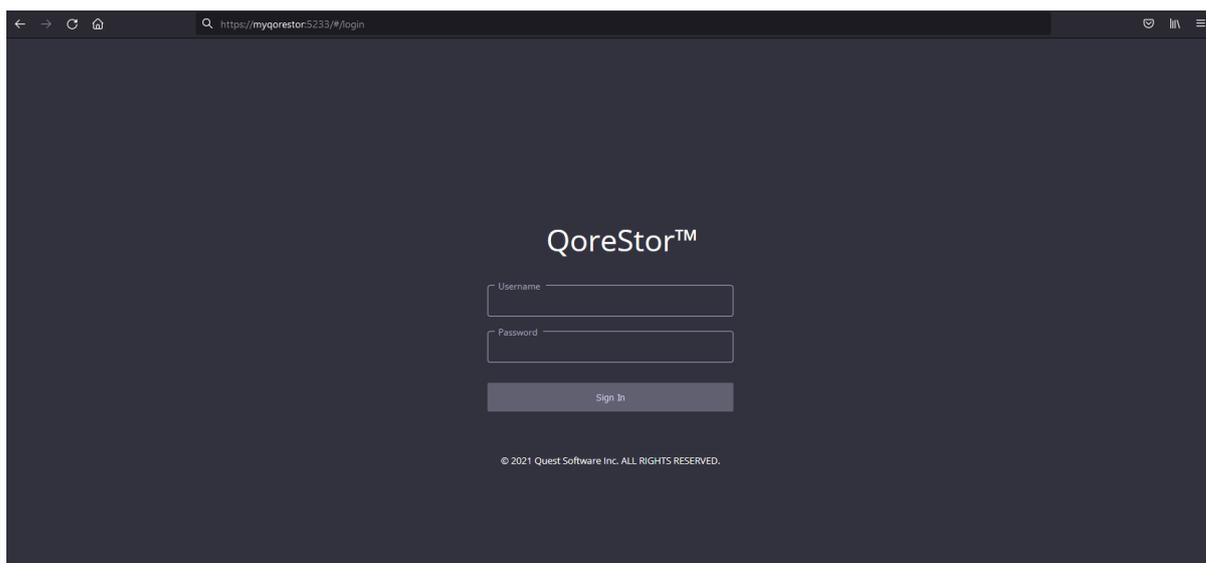
https://www.veritas.com/support/en_US/BackupExec

i | **NOTE:** The QoreStor and Veritas Backup Exec screenshots used in this document might vary slightly depending on the QoreStor version and Backup Exec version you are using.

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>).



- 3 By default, QoreStor has a user with OST Role named backup_user and password "St0r@ge!". Refer to the *QoreStor User Guide* for information on changing user accounts.

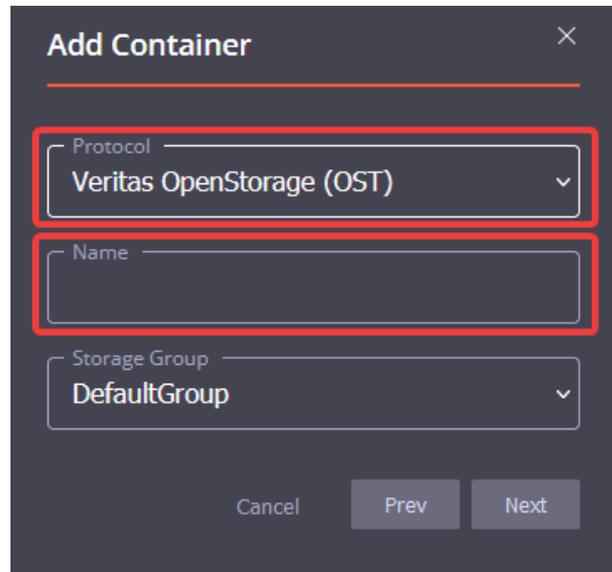
Creating an OST container for Backup Exec

In this chapter, we will show how to create an OST container for Backup Exec using the QoreStor administrative console. If you wish to use QoreStor CLI please refer to the *QoreStor CLI Reference Guide*.

1. Open the QoreStor administrative Console and log in.
2. Select **Containers** in the left navigation pane.
3. Click **Add container**.



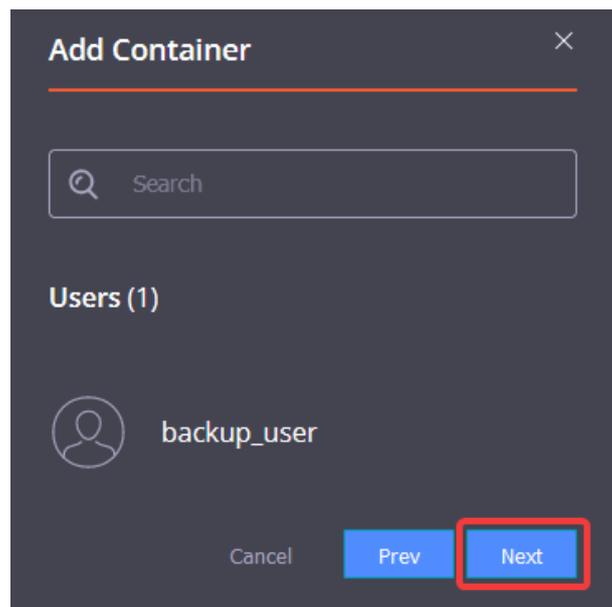
4. Select **Veritas OpenStorage (OST)** from the **Protocol** dropdown. Enter the **Name** of the container.
5. Type a container **Name**.
6. Click the **Next** button.



The screenshot shows a dark-themed dialog box titled "Add Container" with a close button (X) in the top right corner. It contains three input fields: a "Protocol" dropdown menu with "Veritas OpenStorage (OST)" selected, a "Name" text input field, and a "Storage Group" dropdown menu with "DefaultGroup" selected. At the bottom, there are three buttons: "Cancel", "Prev", and "Next". The "Next" button is highlighted with a red border.

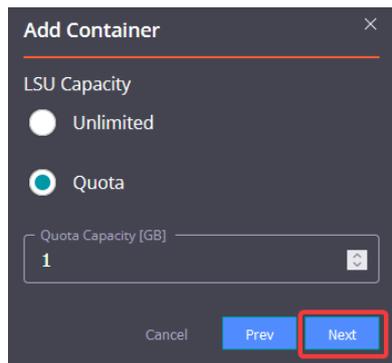
i | **NOTE:** Refer to the QoreStor User Guide for information on creating a new Storage Group.

7. Select the **User(s)** that will have access to the container and click the **Next** button.



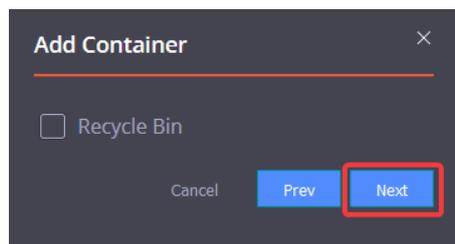
The screenshot shows the same "Add Container" dialog box, but now it displays a search bar at the top and a list of users. The list is titled "Users (1)" and contains one user named "backup_user" with a person icon next to the name. At the bottom, the "Next" button is highlighted with a red border.

8. Select the **LSU Capacity** and click the **Next** button.



The screenshot shows a dark-themed dialog box titled "Add Container". Under the "LSU Capacity" section, there are two radio buttons: "Unlimited" (which is unselected) and "Quota" (which is selected). Below the radio buttons is a text input field labeled "Quota Capacity [GB]" containing the number "1". At the bottom of the dialog, there are three buttons: "Cancel", "Prev", and "Next". The "Next" button is highlighted with a red rectangular box.

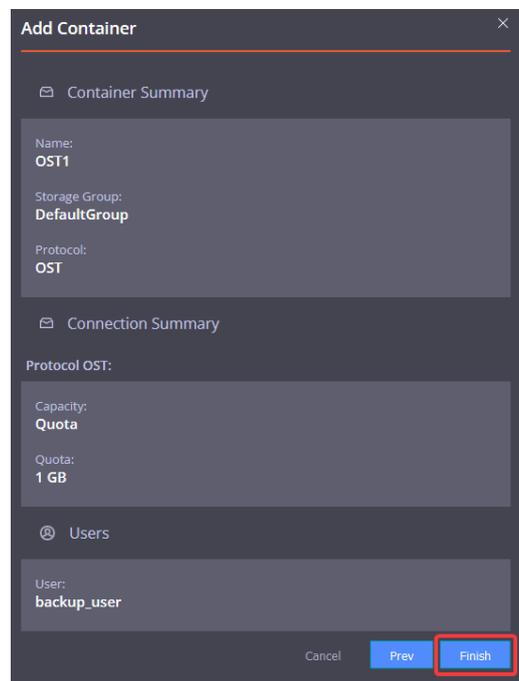
9. Select if you want to enable **Recycle Bin** and click the **Next** button.



The screenshot shows the same "Add Container" dialog box. In this step, the "Recycle Bin" checkbox is visible and is unchecked. The "Next" button at the bottom right is highlighted with a red rectangular box.

i | **NOTE:** Refer to the QoreStor User Guide for information on Recycle Bin feature.

10. Review the Container settings and click the **Finish** button.



The screenshot shows the "Add Container" dialog box with a summary of the configuration. It is divided into three sections: "Container Summary", "Connection Summary", and "Users".
- **Container Summary:** Name: OST1, Storage Group: DefaultGroup, Protocol: OST.
- **Connection Summary:** Protocol OST: Capacity: Quota, Quota: 1 GB.
- **Users:** User: backup_user.
At the bottom, the "Finish" button is highlighted with a red rectangular box.

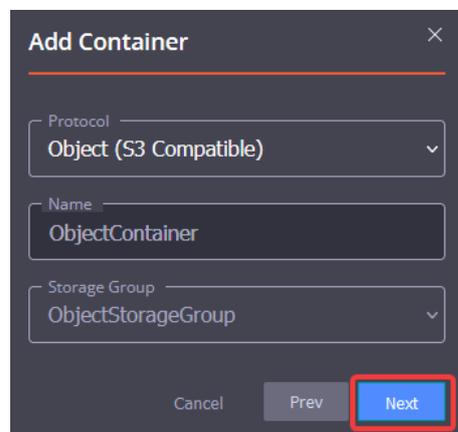
Creating an Object Container for Backup Exec

In this chapter, we will show how to create an Object container for Backup Exec using the QoreStor administrative console. If you wish to use QoreStor CLI please refer to the *QoreStor CLI Reference Guide*.

1. Open the QoreStor administrative Console and log in.
2. Select **Containers** in the left navigation pane.
3. Click **Add container**.



4. Select **Object (S3 Compatible)** from the **Protocol** dropdown.
5. Click the **Next** button.

The screenshot shows a modal dialog box titled 'Add Container'. It contains three input fields: 'Protocol' with a dropdown menu set to 'Object (S3 Compatible)', 'Name' with a text input field containing 'ObjectContainer', and 'Storage Group' with a dropdown menu set to 'ObjectStorageGroup'. At the bottom of the dialog, there are three buttons: 'Cancel', 'Prev', and 'Next'. The 'Next' button is highlighted with a red rectangle.

6. Select if you want to use **Encryption**, **Unlimited Quota**, and **Use HTTP** instead of **HTTPS**.
7. Click the **Next** button.

The screenshot shows the 'Add Container' dialog box with the following settings:

- Encryption
- Passphrase: [Empty text box]
- Confirm Passphrase: [Empty text box]
- Encryption Mode: Static
- Unlimited Quota
- Quota: 100
- Format: GiB
- Use HTTP instead of HTTPS

Buttons at the bottom: Cancel, Prev, Next.

8. Review the Container settings and click the **Finish** button.

The screenshot shows the 'Add Container' dialog box with the following summary information:

- Container Summary**
 - Name: ObjectContainer
 - Storage Group: ObjectStorageGroup
 - Protocol: OBJECT
- Connection Summary**
 - Protocol Object:
 - Encryption: Enabled
 - Mode: Static
 - Quota: 100 G

Buttons at the bottom: Cancel, Prev, Finish.

i **NOTE:** Refer to the QoreStor User Guide for information on additional features of the Object container.

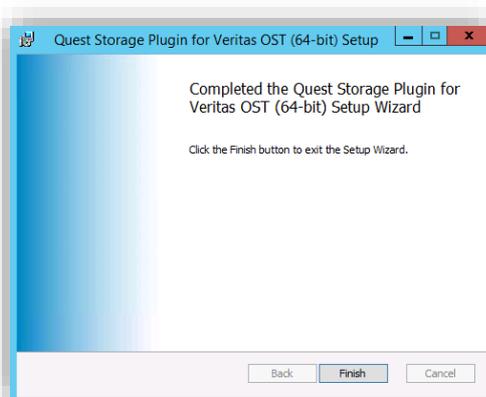
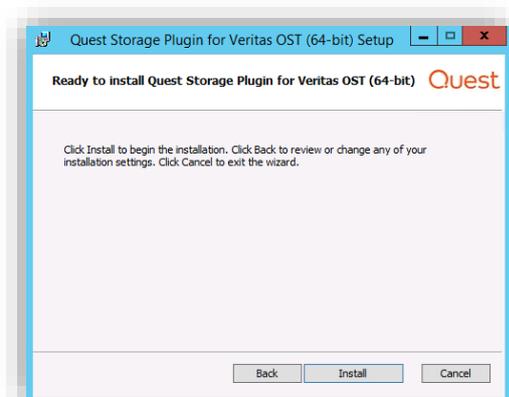
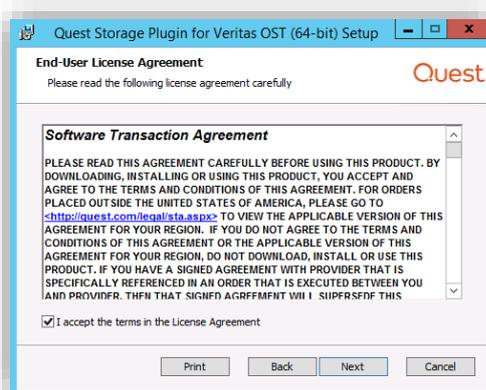
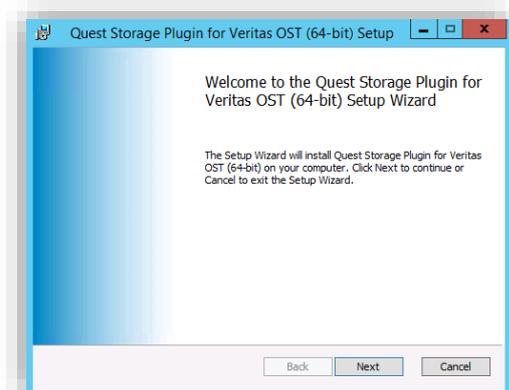
Installing the Quest OST Plugin

To enable Backup Exec to use QoreStor, the Quest OST Plugin must be installed in the Backup Exec Media Server(s).

Before proceeding, refer to the *QoreStor Interoperability Guide* for a list of supported Operating Systems, Backup Exec, and OST Plugin versions. Once identified, download the OST Plugin at <https://support.quest.com/qorestor/>.

Installing the OST Plugin on Windows

- 1 Download the Quest OST Plugin onto the server you wish to install.
- 2 Execute the OST Plugin .msi installer and follow the screen prompts.



Installing the OST Plugin on Linux

- 1 Download the Quest OST Plugin onto the server you wish to install.
- 2 Extract the .bin file from the .gz package and give it executable permission.
- 3 Execute the .bin file adding **-install** switch.

```
gunzip ./QuestOSTPlugin-X.X.X.X-x86_64-RHEL/SLES.bin.gz
chmod +x ./QuestOSTPlugin-X.X.X.X-x86_64-RHEL/SLES.bin.gz
./QuestOSTPlugin-X.X.X.X-x86_64-RHEL/SLES.bin.gz -install

Starting, please wait...

OST Plugin Installation requires nbrmms service to be stopped.

Checking if nbrmms service is running...

nbrmms service is not running, proceeding with Installation...

Preparing...
QuestOSTPlugin
oca-libs
#####
#####
#####

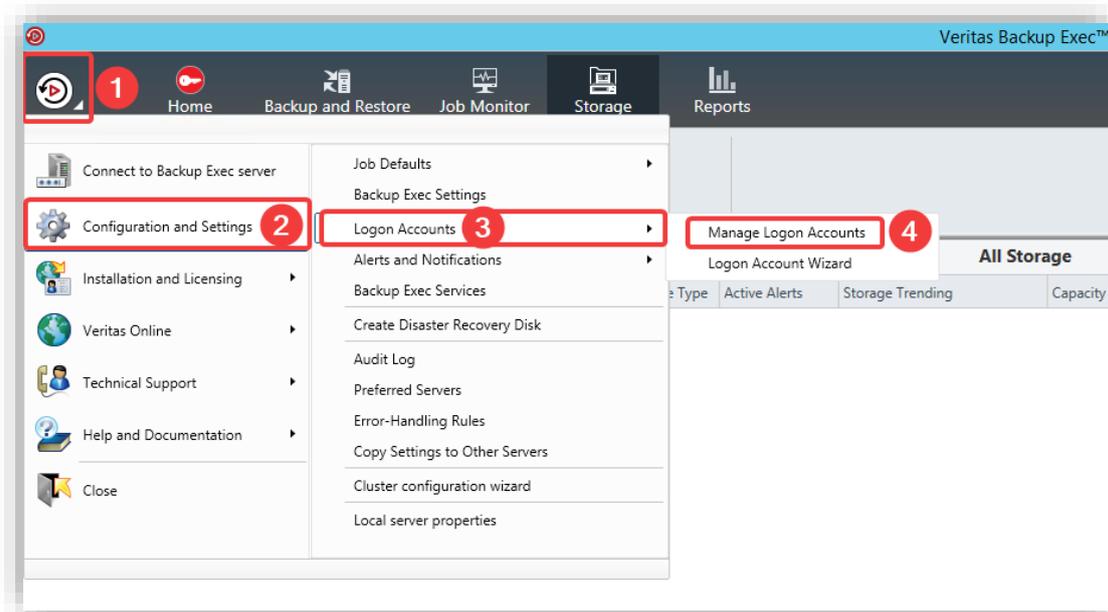
Installation successful!

Log for this operation is /var/log/libstspioca_install.log
```

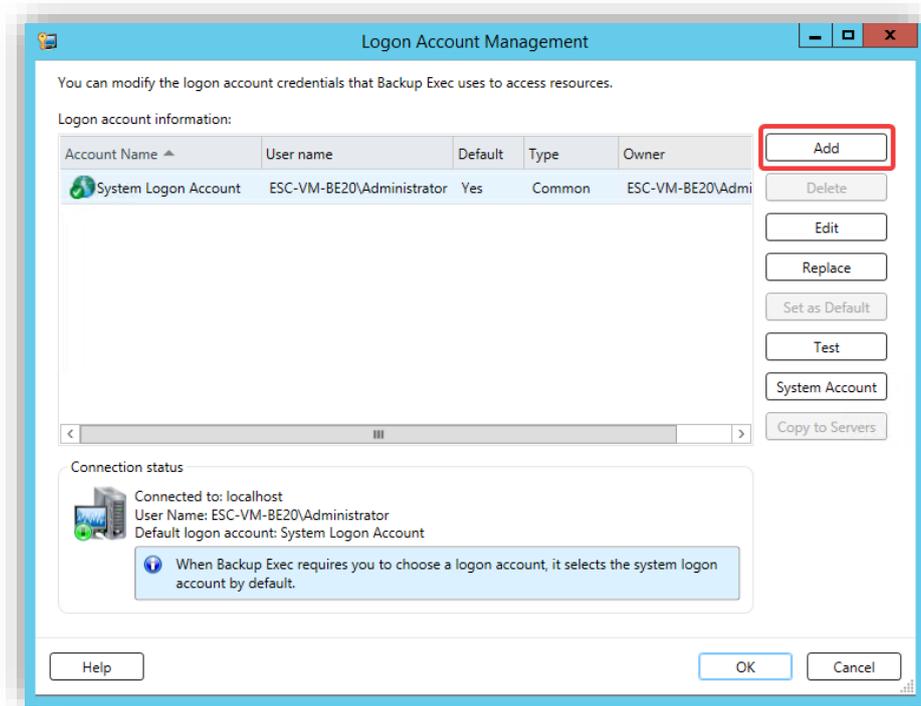
Adding the OST account to Backup Exec

This section provides information needed to add an existing or newly created OST account to Backup Exec. By default, QoreStor has a user with OST Role named backup_user and password "St0r@ge!". Refer to the *QoreStor User Guide* for information on changing user accounts.

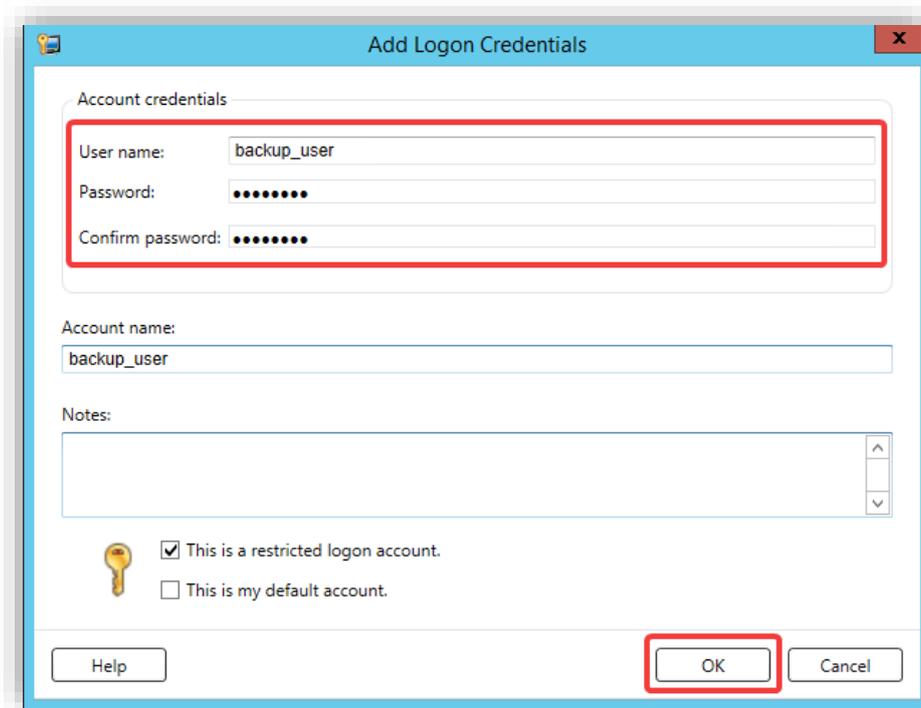
1. Open the Backup Exec administration console.
2. Click the **Backup Exec** button ❶, then **Configuration and Settings** ❷, **Logon Accounts** ❸, and **Manage Logon Accounts** ❹.



3. Click **Add** on the newly opened pop-up window.



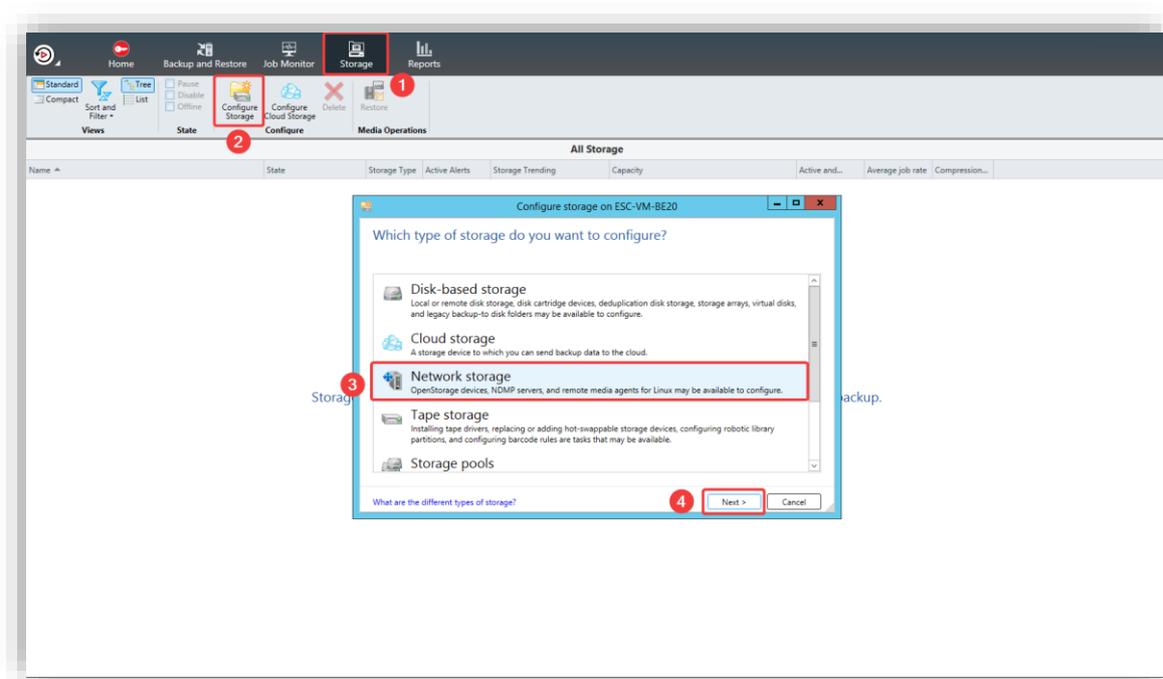
4. Enter the **User name**, **Password**, and **Confirm password**. Click **OK** to add the account.



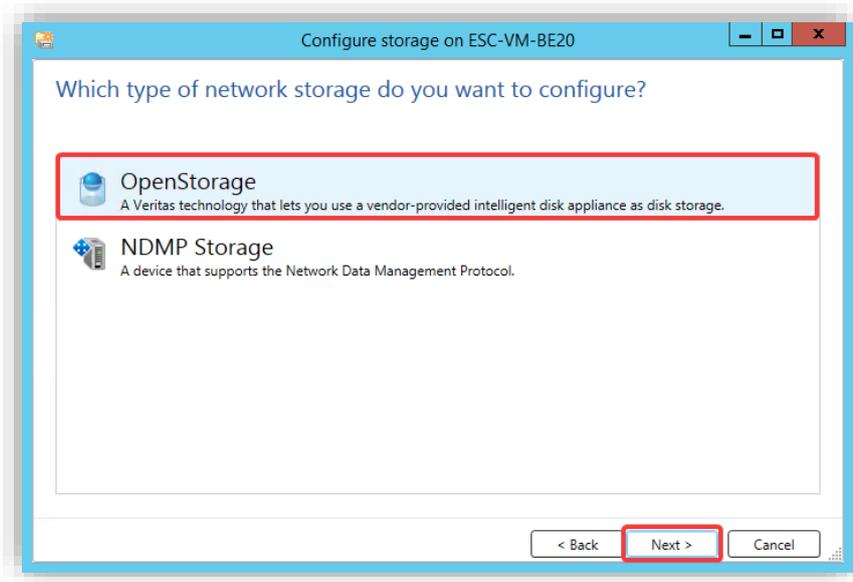
Adding an OST container to Backup Exec

This section provides information needed to add an existing or newly created OST container to Backup Exec.

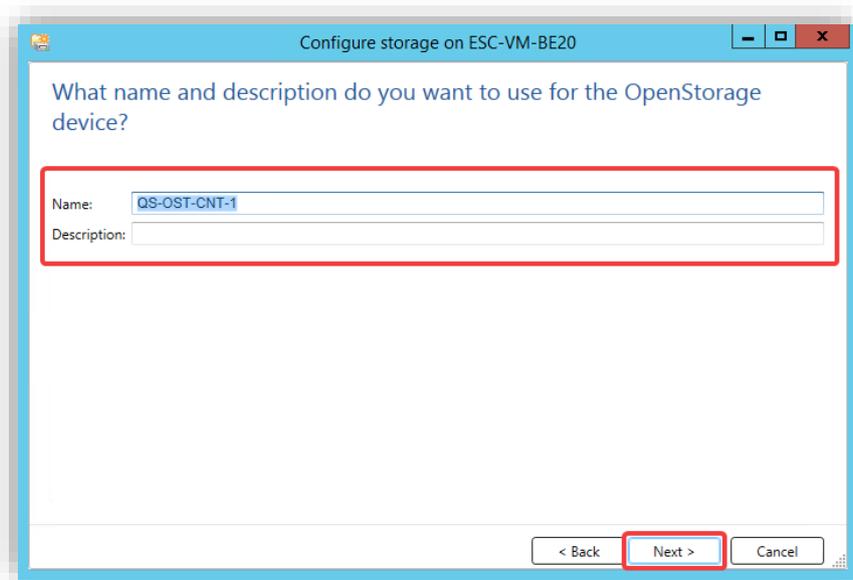
- 1 Open the Backup Exec administration console.
- 2 Open the **Storage** tab **1**, click **Configure Storage** **2**, select **Network storage** **3**, and click **Next** **4**.



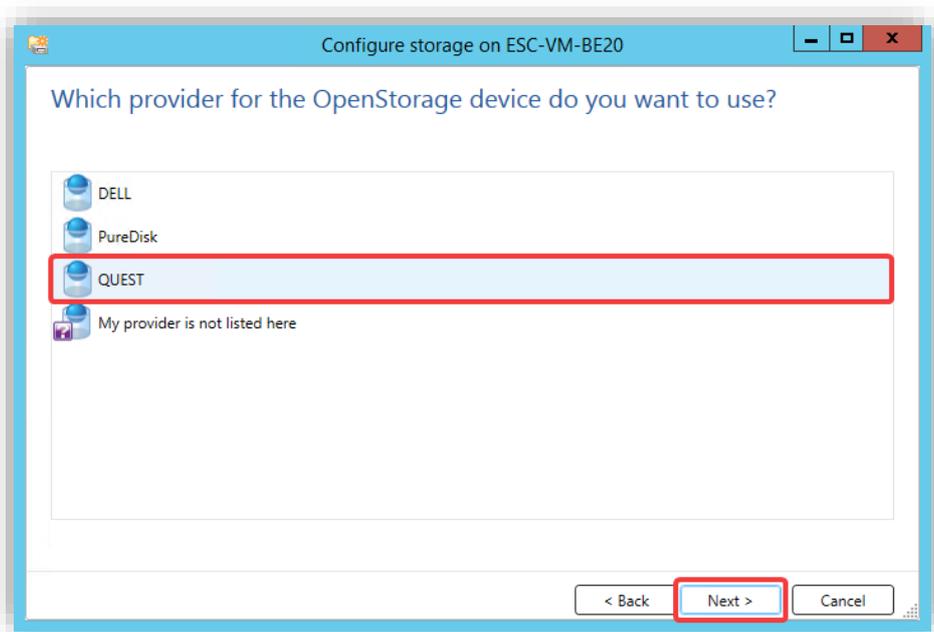
- 3 Select **OpenStorage** and click **Next**.



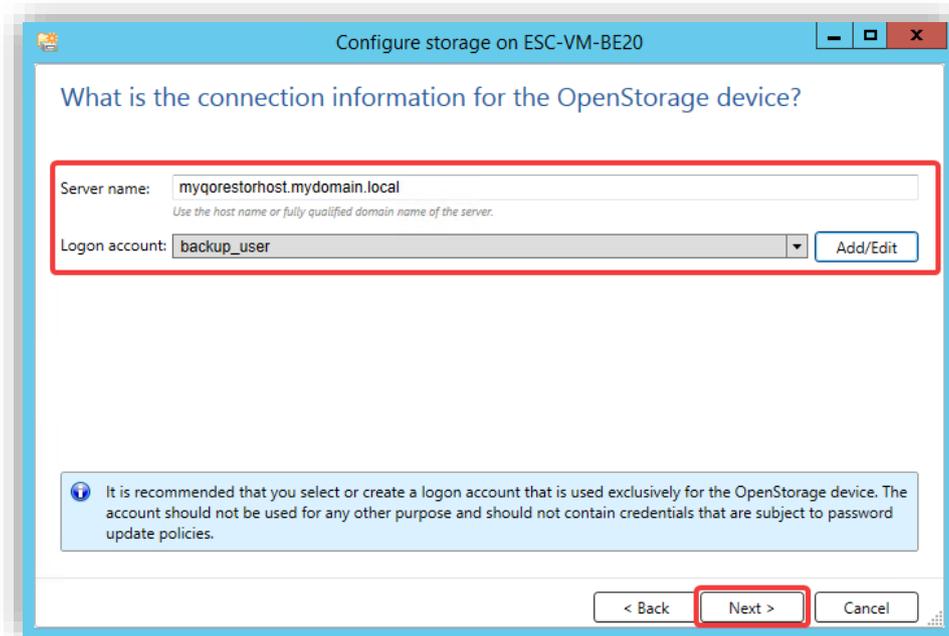
- 4 Enter the desired **Name** and **Description** (optional) for the configured OST device and click **Next**.



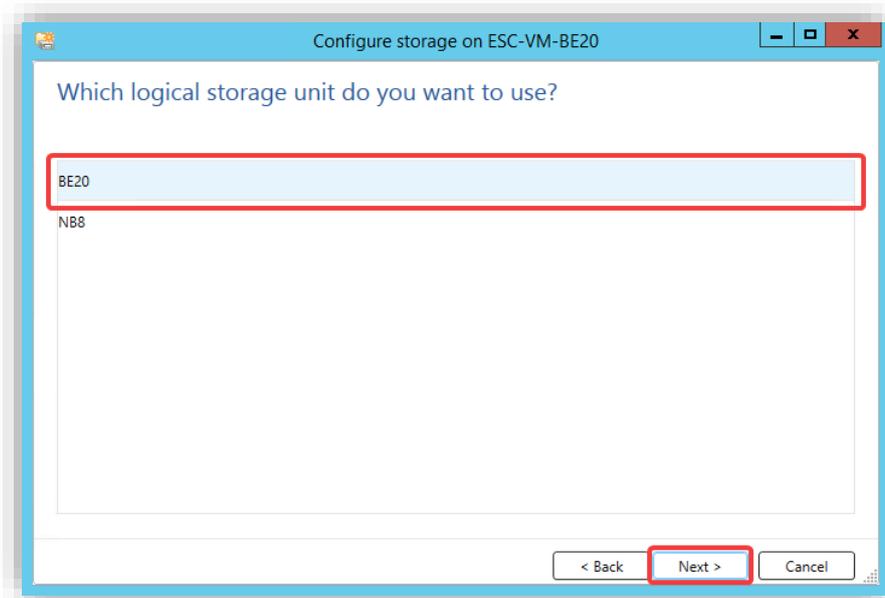
- 5 Select **QUEST** as the provider and click **Next**.



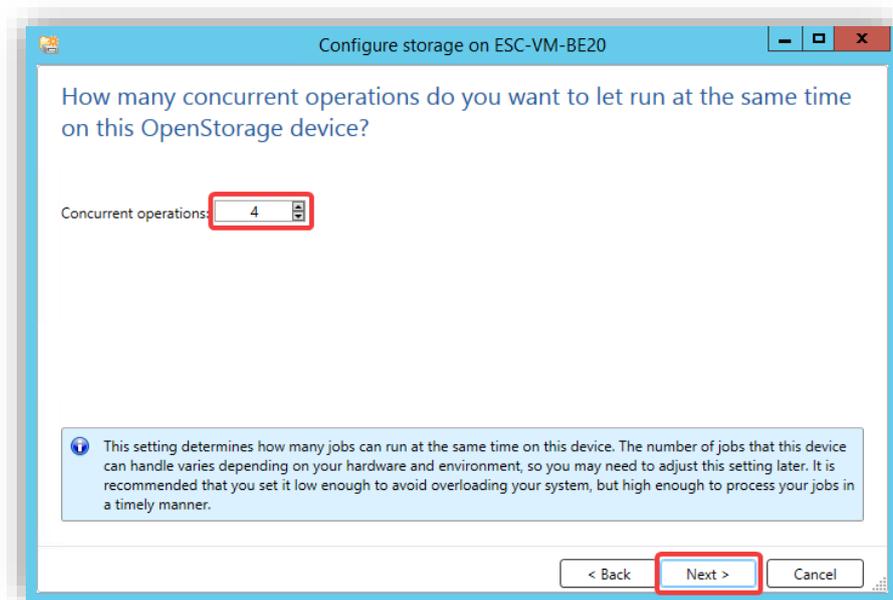
- 6 Enter the QoreStor **Server name** (IP/hostname or FQDN) and select the OST account as the **Logon account**. Click **Next**.



- 7 Select the OST container to be added from the list and click **Next**.

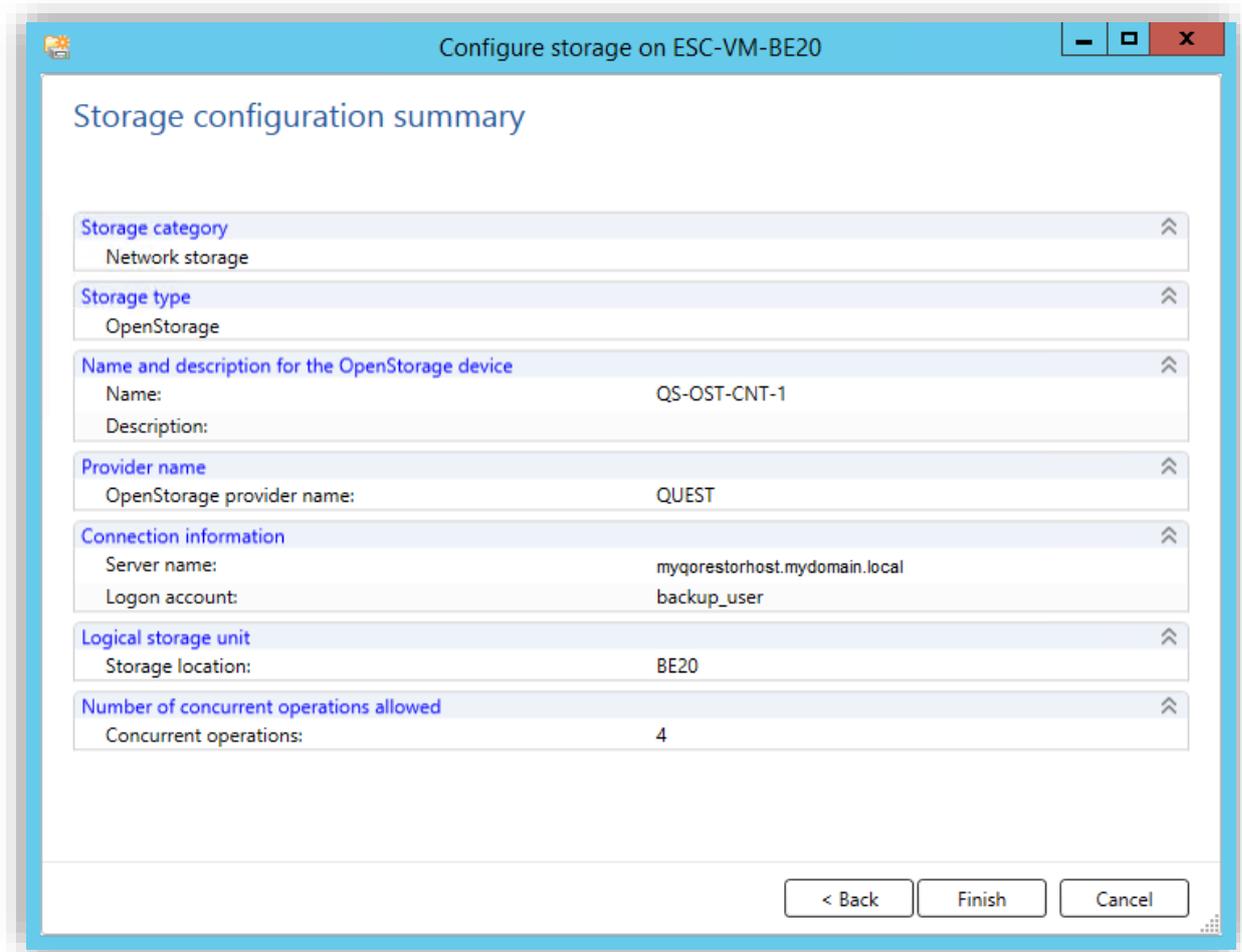


- 8 Enter the number of how many **Concurrent operations** that can run and click **Next**.

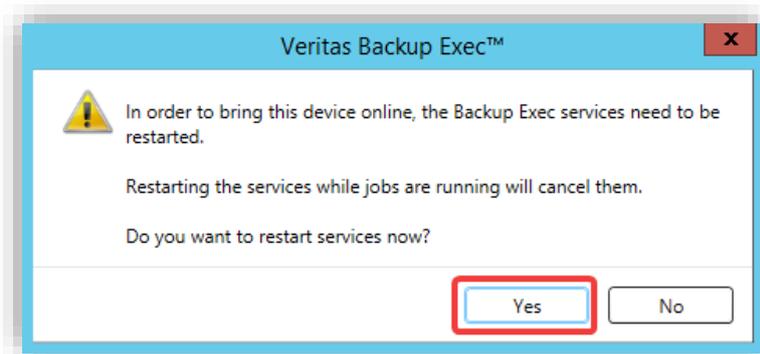


i **NOTE:** When choosing the number of concurrent operations, both the QoreStor and the hosting Hardware limits need to be taken into consideration to prevent job failures should those limits be exceeded. Refer to the QoreStor Interoperability Guide for more information.

- 9 Review the **Storage configuration summary** and click **Finish**.



- 10 Click **Yes** to restart the Backup Exec Services and bring the newly added device online.



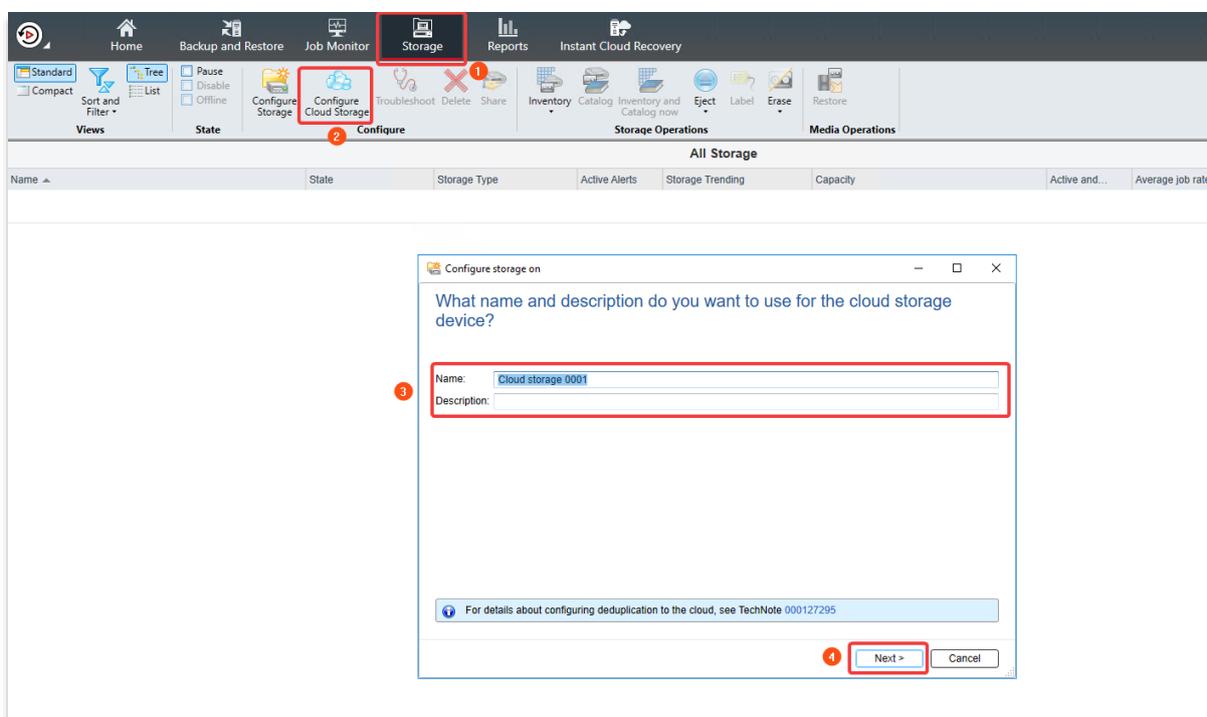
Adding an Object container to Backup Exec

This section provides information needed to add an existing or newly created Object container to Backup Exec.

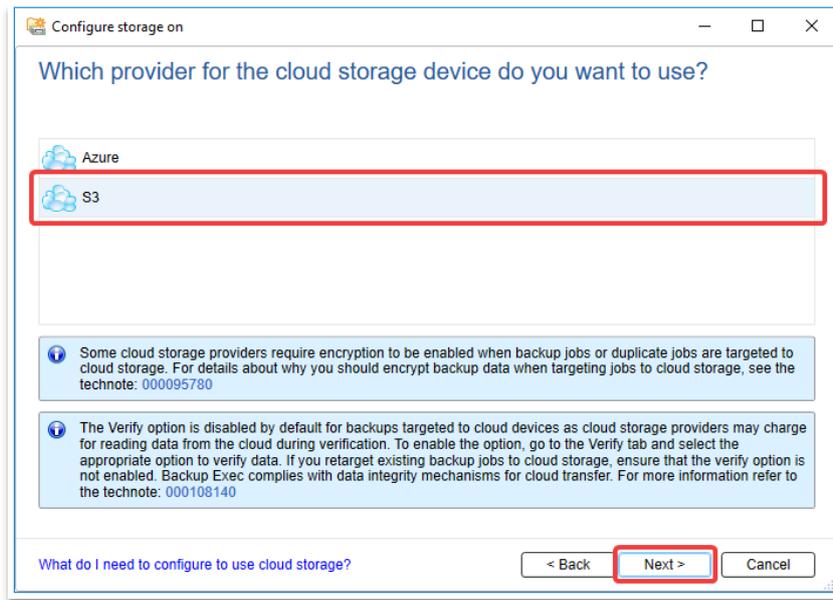
- 1 Connect to the Backup Exec server and run the PowerShell command to add a generic S3 device as documented in https://www.veritas.com/support/en_US/article.100038827, e.g.:

```
New-BECloudInstance -Name "qorestor" -Provider "compatible-with-S3" -ServiceHost "qorestor.hostname.or.ip" -SslMode "disabled" -HttpPort 9000
```

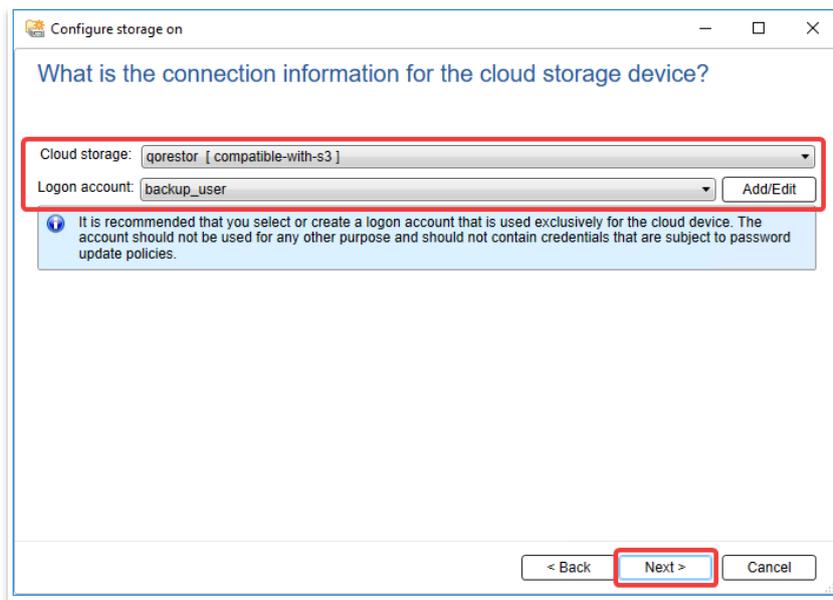
- 2 Open the Backup Exec administration console.
- 3 Open the **Storage** tab **1**, click **Configure Cloud Storage** **2**, type **Name** and **Description** **3**, and click the **Next** button **4**.



- 4 Select **S3** and click the **Next** button.

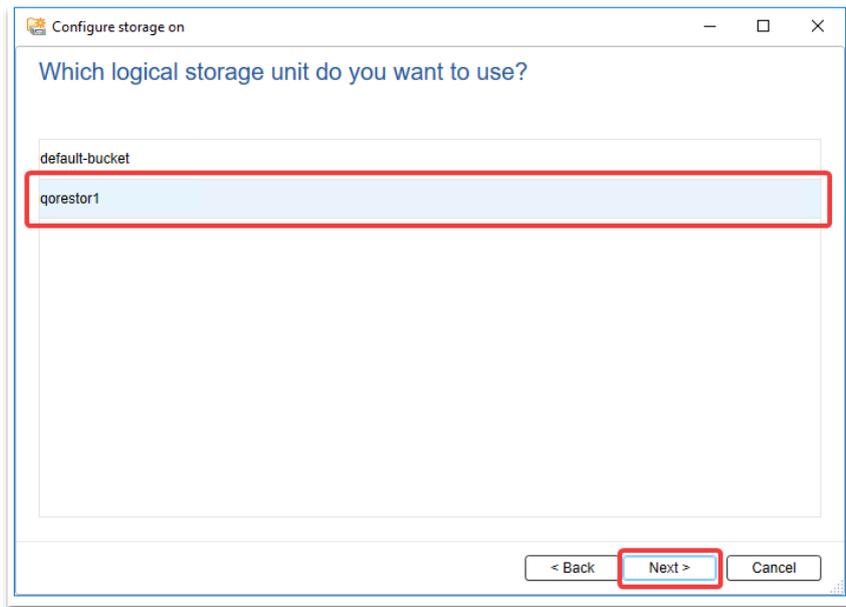


- 5 Chose the previously created **Cloud Storage** and Object account as the **Logon account** and click the **Next** button.



i **NOTE:** You can use the previously created OST account or create a separate account. The only requirement is that the chosen account has the **Object** Role in QoreStor.

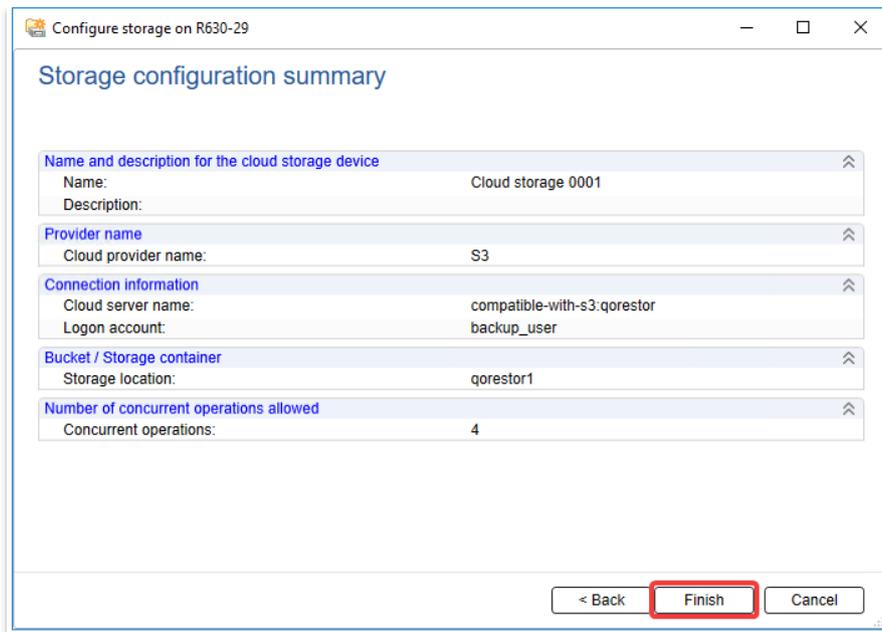
- 6 Select the **logical storage unit** (bucket) and click the **Next** button.



- 7 Select the number of **Concurrent Operations** and click the **Next** button.



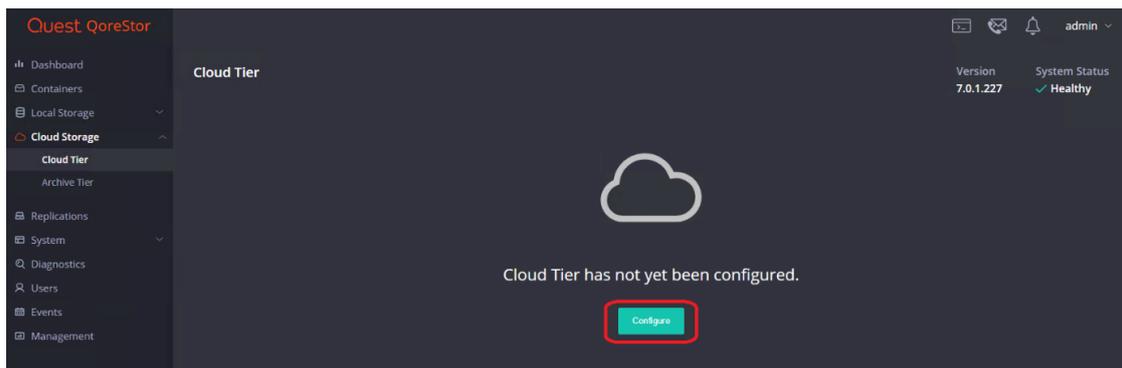
- 8 Review the configuration summary and click the **Finish** button.



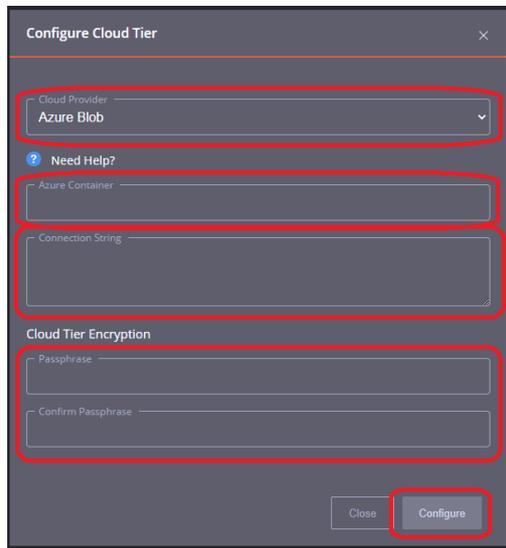
Creating a policy driven Cloud Tier

Cloud Tier is a feature that allows a QoreStor system to tier deduplicated blocks of files to a cloud provider via S3 protocol. There are several cloud and on-prem solution providers supported including Azure, AWS, Wasabi, IBM, Google, and many other S3-compatible solutions. Once added one or more containers can be added to a policy. How that policy is configured can determine how long the data is available on-prem in QoreStor, how long it's available both on-prem and in the cloud simultaneously, and finally at what point is it only available in the cloud.

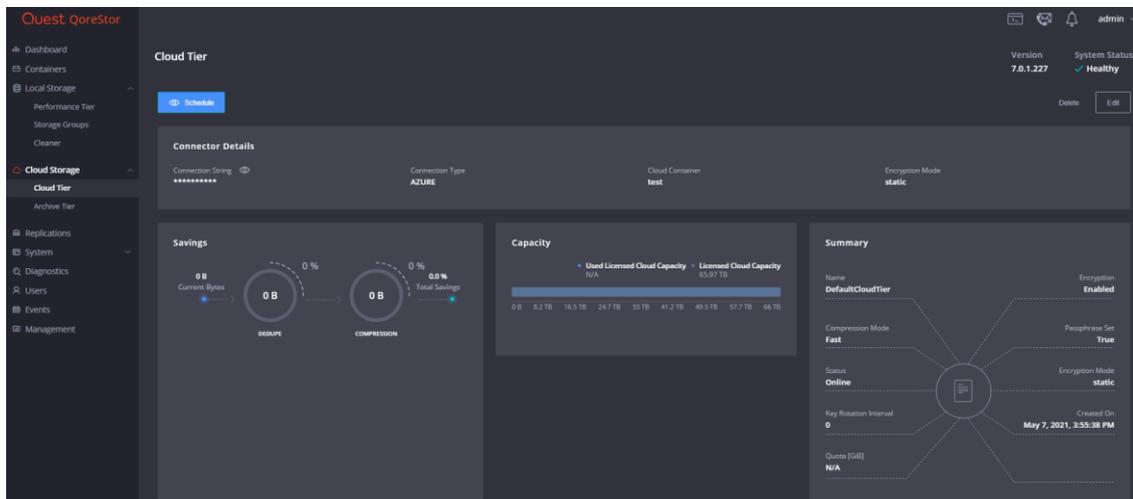
1. Open the QoreStor UI, Expand the **Cloud Storage** section and select the **Cloud Tier** page. Click the **Configure** button.



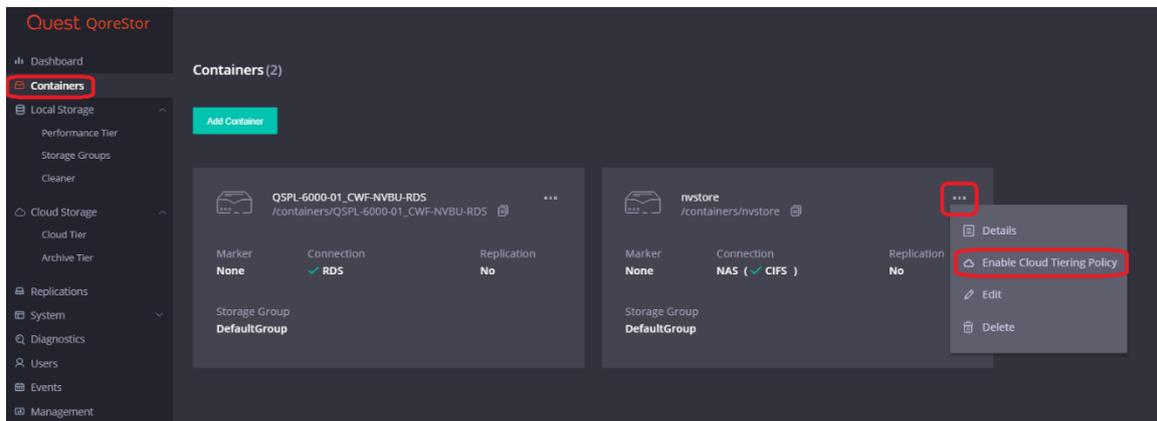
2. Select the **Cloud Provider** dropdown and pick your required provider. Depending on the selected provider the following fields will change. The **Container** field will be a folder/bucket created in the cloud provider, there is no need to create a folder on your own. This folder name is usually limited in accepted characters by the provider. Also please make sure to keep your **passphrase**, without this the data is not recoverable in a Disaster Recovery scenario. Click **Configure**.



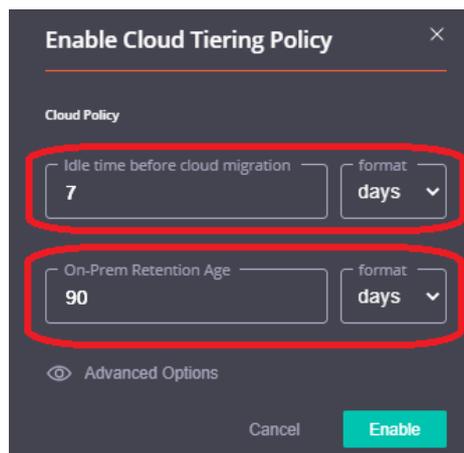
3. Once added this is how the cloud tier page should appear.



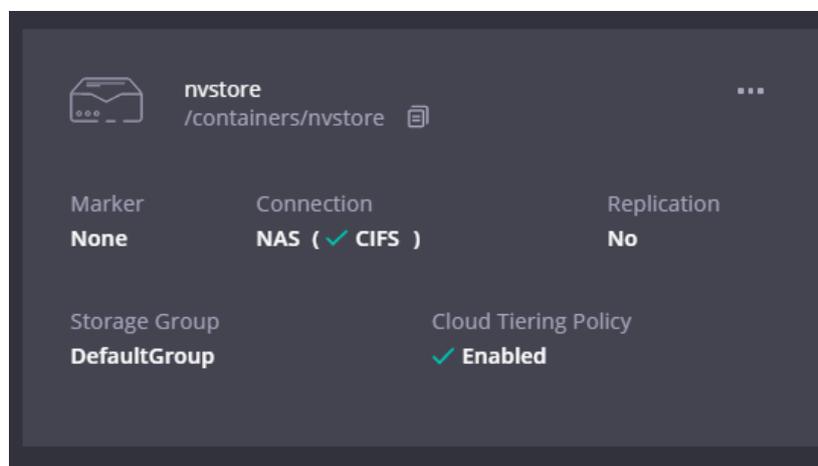
- We need to add a cloud tiering policy to a specific container. Do this by navigating to the **Containers** page, selecting the **ellipsis** in the top right corner of the specific container, and clicking **Enabled Cloud Tiering Policy**.



- In the next window, we need to define the policy. **Idle time before cloud migration** specifies the number of hours/days datablocks must be kept idle before being sent to the cloud. **On-Prem Retention age** specifies the number of hours/days files will be kept locally after they are sent to the cloud. Click **Enable**.



- The container should now show with the cloud tiering policy enabled.



Setting up the QoreStor cleaner

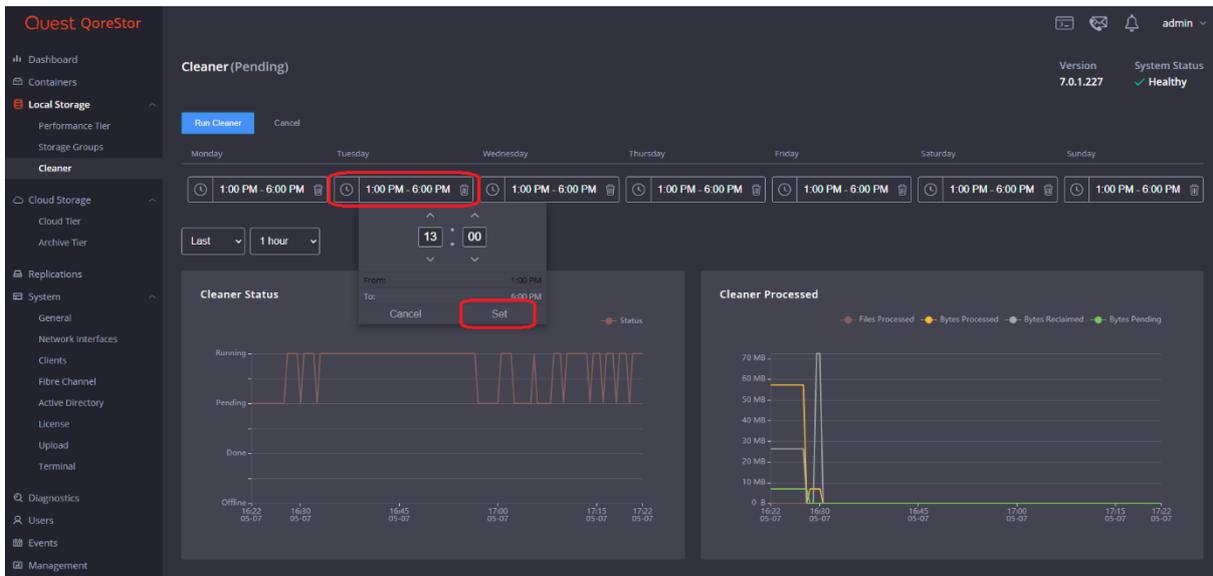
Performing scheduled disk space reclamation operations are needed as a method for recovering disk space from system containers in which files were deleted as a result of deduplication. Ideally, the QoreStor cleaner should complete a full cycle at least once a week. This will be accomplished in most cases by the predefined QoreStor cleaner schedule. The cleaner also runs during idle time.

To change the predefined cleaner schedule times, perform the following steps:

1. Open the QoreStor administrative console.
2. Expand **Local Storage** in the top navigation pane.
3. Select **Cleaner**.
4. Click **Edit Schedule**.

The screenshot displays the Quest QoreStor administrative console interface. The left-hand navigation pane shows the 'Local Storage' section expanded, with 'Cleaner' selected. The main content area is titled 'Cleaner(Running)' and includes a 'Stop Cleaner' button and an 'Edit Schedule' button. Below this, a weekly schedule is shown with '1:00 PM - 6:00 PM' for each day. A dropdown menu is set to 'Last' and '1 hour'. Two charts are visible: 'Cleaner Status' showing a line graph of the cleaner's state (Running, Pending, Done, Offline) over time, and 'Cleaner Processed' showing a bar chart of 'Files Processed', 'Bytes Processed', 'Bytes Reclaimed', and 'Bytes Pending' over time.

5. Define the schedule and click **Set**.



i **NOTE:** If necessary, you can also perform a full clean cycle manually using either the QoreStor Administrative Console, QoreStor CLI, or the NetVault Backup UI.

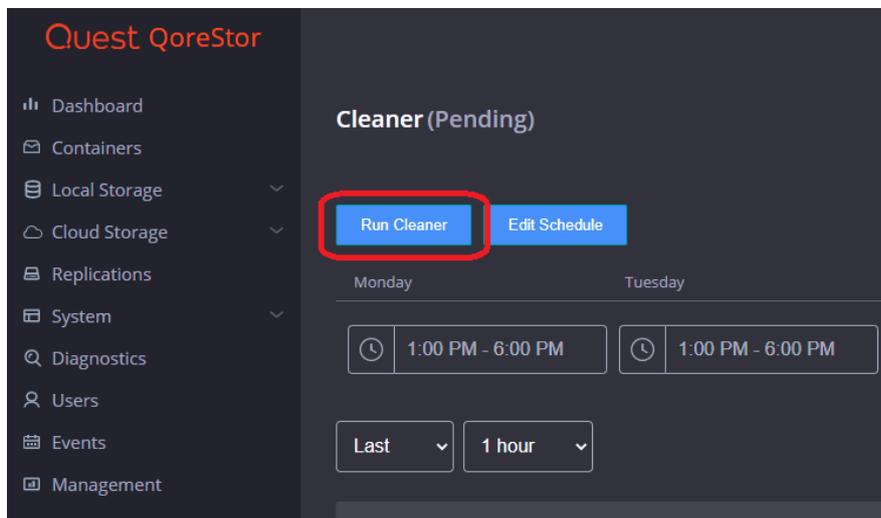


Figure 1: Using the QoreStor Administrative Console

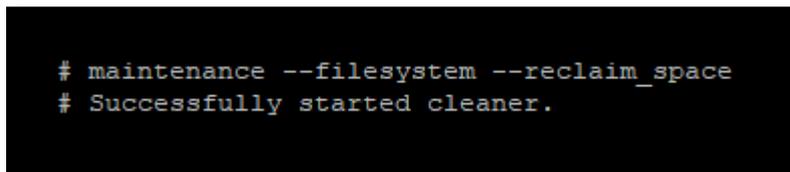
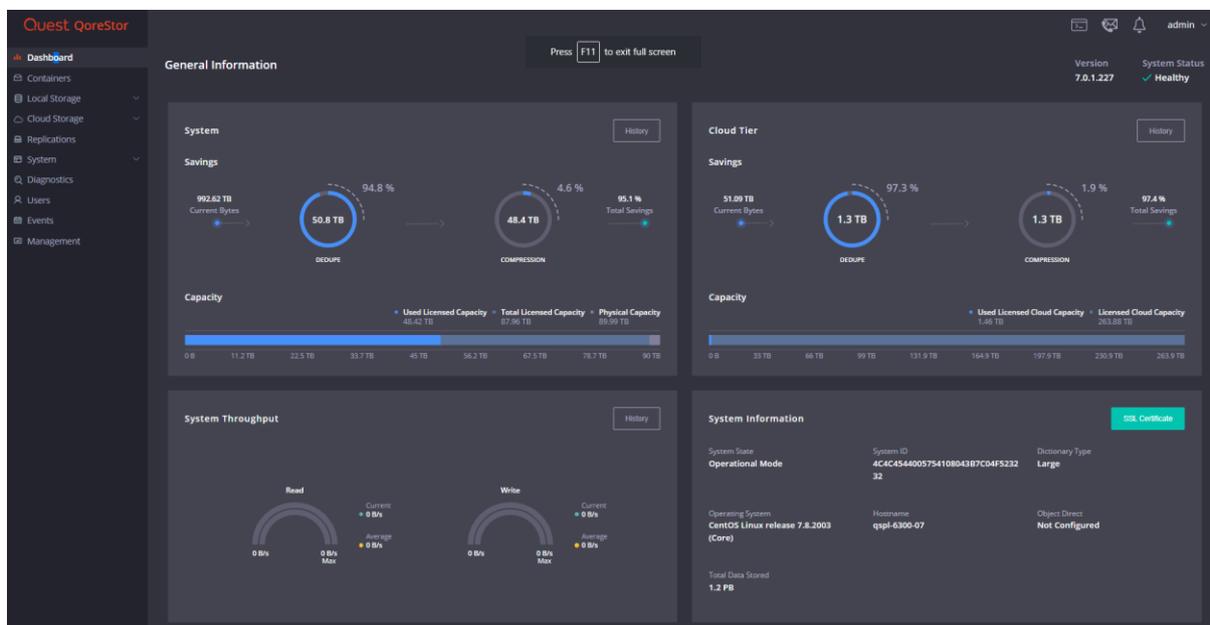


Figure 2: Using the QoreStor CLI

Monitoring deduplication, compression, and performance

After backup jobs have run, QoreStor tracks capacity, storage savings, and throughput. To view the historical representation of these values is shown in the dashboard of the QoreStor administrative console. 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.