SPECTRA VAIL OPERATOR GUIDE

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View Capacity Information

The Capacity page allows you to see data capacity information for the Spectra Vail® sphere endpoints, each configured location, and cloud storage.

Note: Capacity values for BlackPearl storage display zeros until data is written to the storage.

In the Vail management console taskbar, click **Capacity**.

The Capacity screen is separated into three sections:

- The **Sphere Endpoint Physical Capacity** pane displays the combined total of all configured BlackPearl, Vail VM node, and cloud storage endpoints.

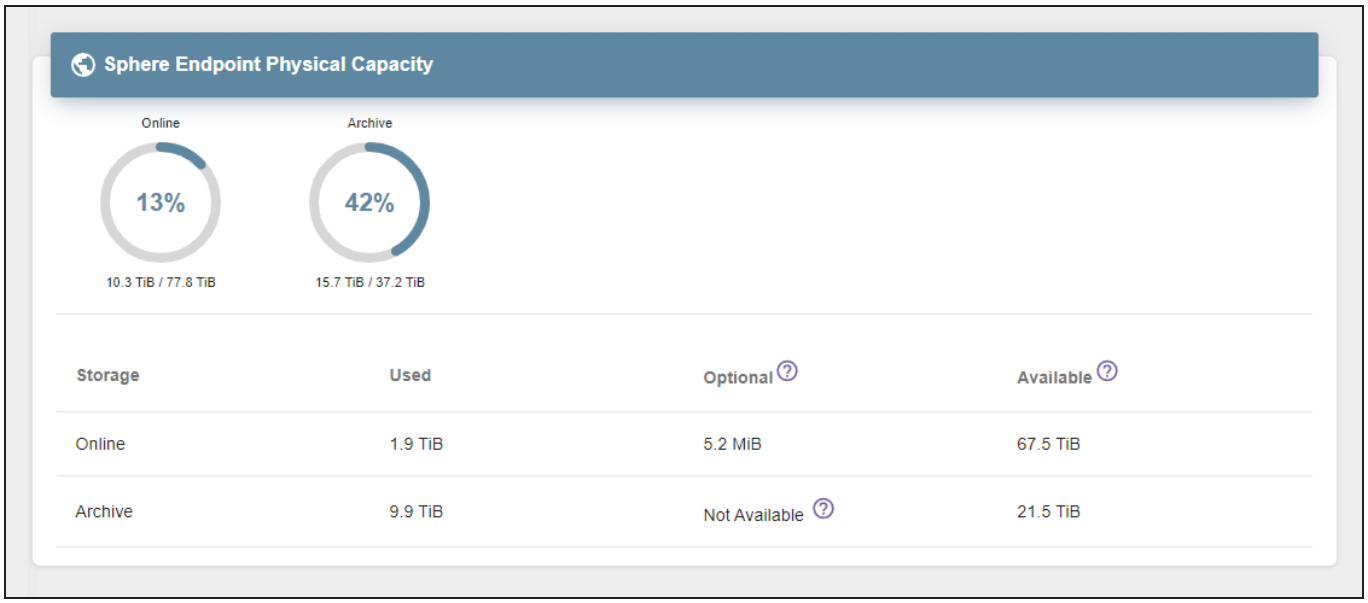

Figure 1 The Sphere Endpoint Physical Capacity pane.

Field	Description
Storage	The type of storage.
Used	The amount of space used for each storage type.
Optional	The amount of space used by the optional clones. There is a delay before this field is populated after creating storage.
Available	The available space used for each storage type. **Note:** Available capacity does not account for capacity used by file system overhead.

- The **Location Capacity** pane displays data capacity information for each configured location. Buttons in the top left of the pane allow you to view information for each location.

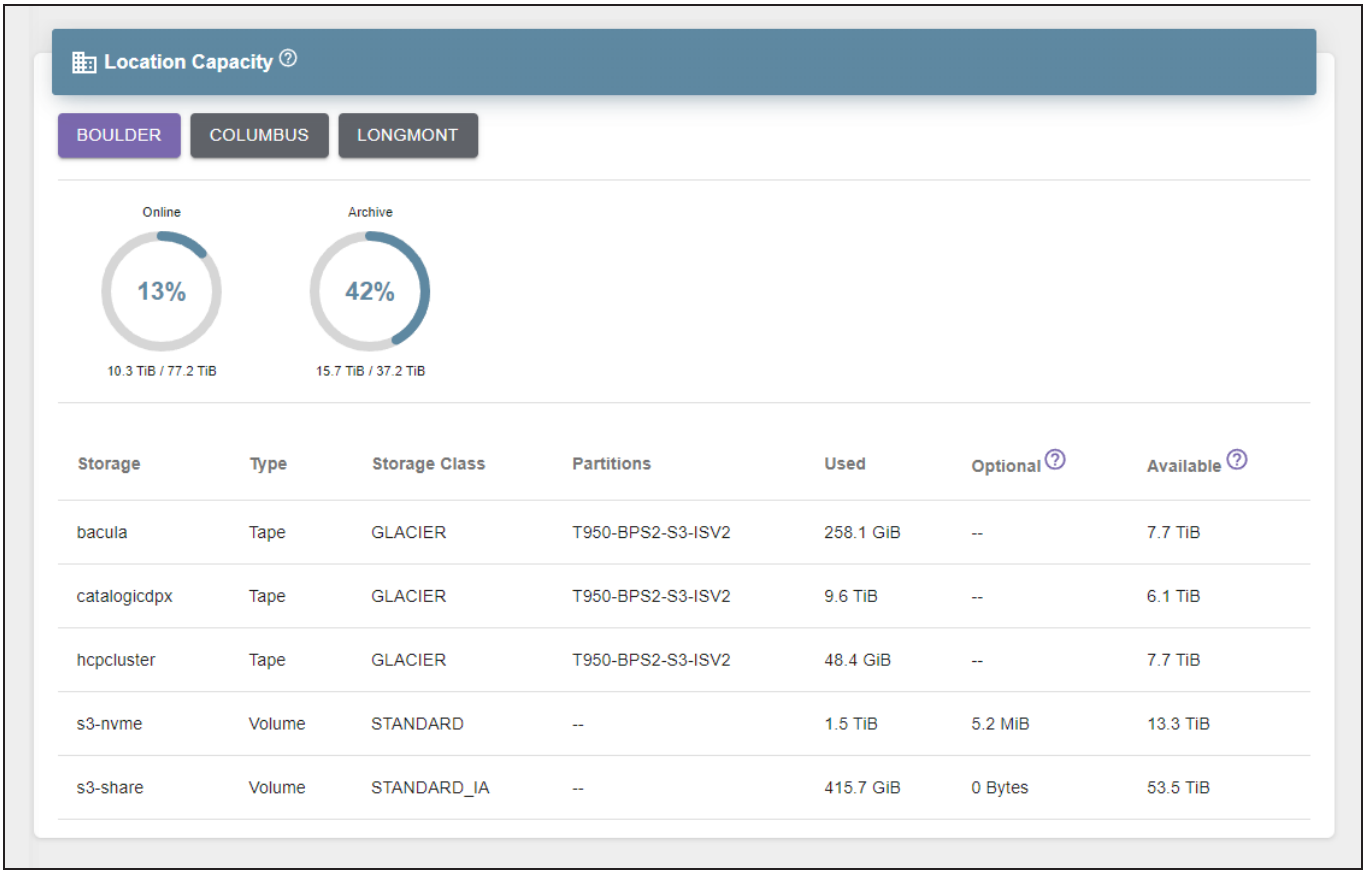

Figure 2 The Location Capacity pane.

Field	Description
Storage	The name of the location.
Type	The type of storage used for each location. **Tape**- Storage on tape media on a BlackPearl system. **Volume** - Storage on disk volume storage on a BlackPearl system.
Storage Class	The storage class used by the storage location.
Partitions	The BlackPearl data partition(s) that are used for storage.
Used	The amount of space used for each location.
Optional	The amount of space used for optional object clones.
Available	The available space used for each location. BlackPearl storage is over-provisioned, and may be used by multiple storage endpoints. **Note:** Available capacity does not account for capacity used by file system overhead.

- The **Cloud Capacity** pane displays aggregated data capacity information for each type of storage class used by cloud endpoints.

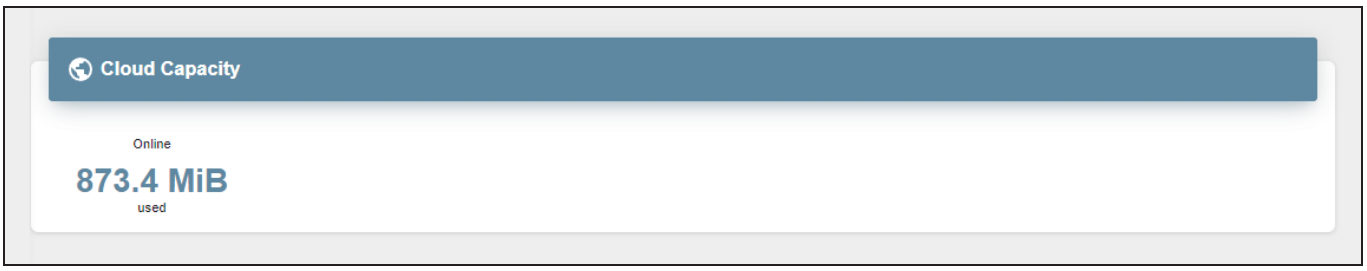

Figure 3 The Cloud Capacity pane.

VIEW PERFORMANCE METRICS

The Performance page displays data transfer and operation performance for the Vail sphere and all configured endpoints. The performance graphs display information in five minute or one day intervals.

In the Vail management console taskbar, click **Performance**.

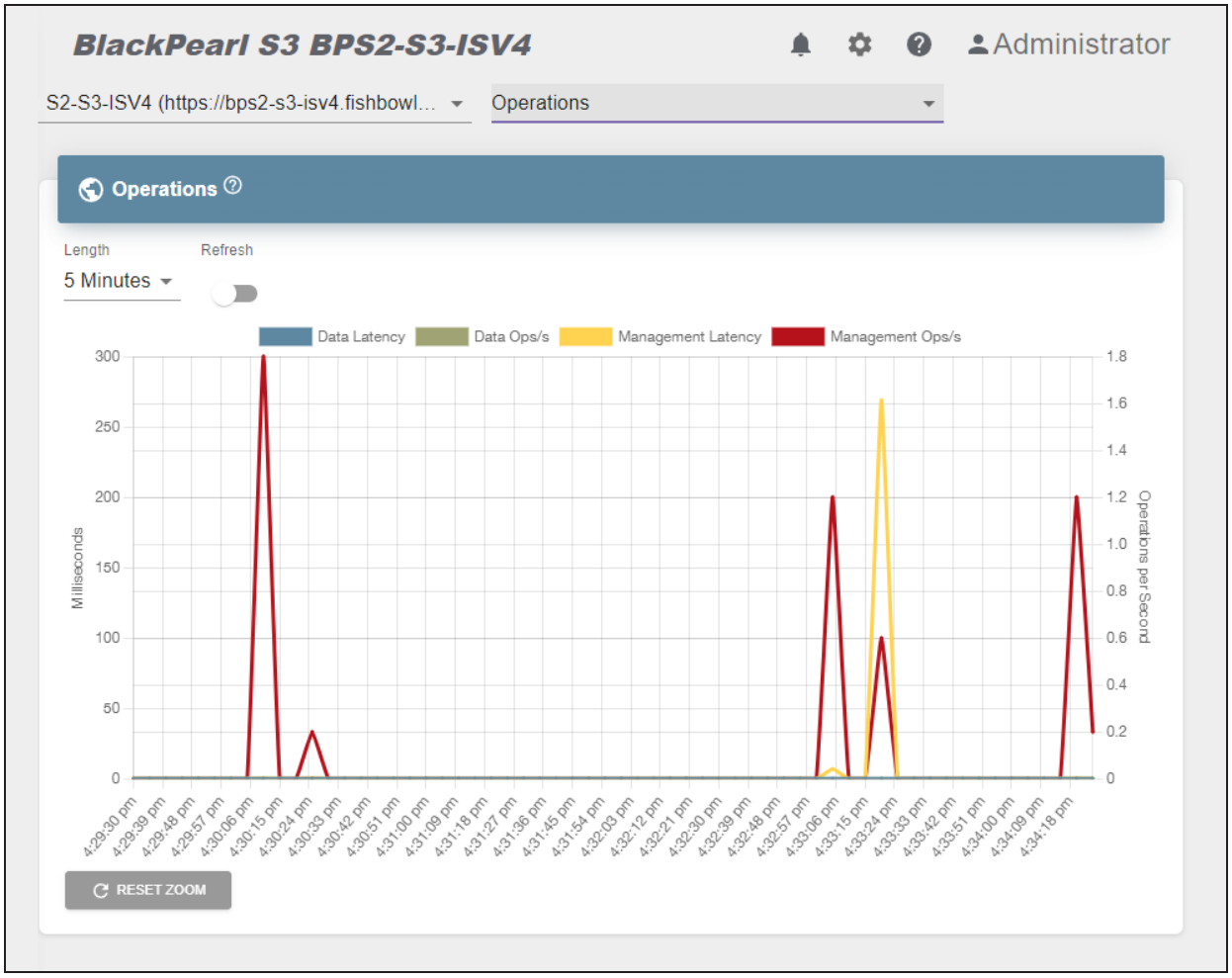

Figure 4 The Performance screen.

- Use the **Endpoint** drop-down menu to select an endpoint for any graph on the Performance screen.
- Use the **Graph Type** drop-down menu to select which graph to display.
- Use the **Length** drop-down menu to select between intervals of five minutes or one day.
- Toggle the **Refresh** slider to refresh the display.

- To display the exact time and performance information, **mouseover** any point on a graph.

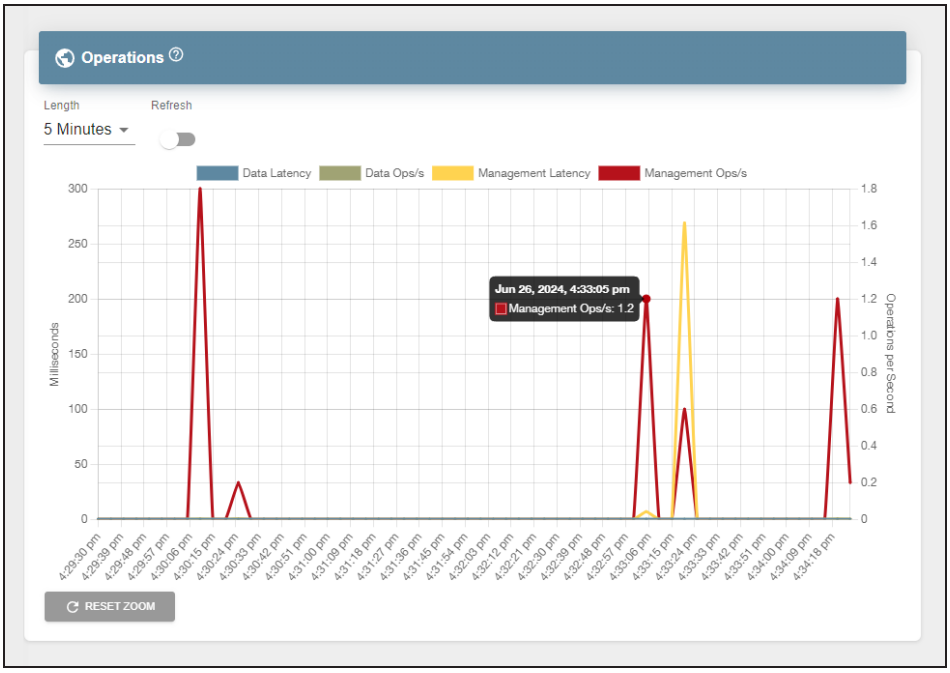

Figure 5 The Operations graph - mouseover.

View Vail Bucket Details

The buckets detail screen displays information about the selected Vail bucket, including bucket properties, ACLs, and policy.

Here is how to view the details of a Vail bucket:

1. In the Vail management console taskbar, click **Buckets**.
2. Under the **Buckets** banner, select a bucket row, then click the **View Details** icon on the right side of the pane.

Note: If you click the bucket name instead of the bucket row, the Bucket Contents pane displays. See View Vail Bucket Contents on page 16.

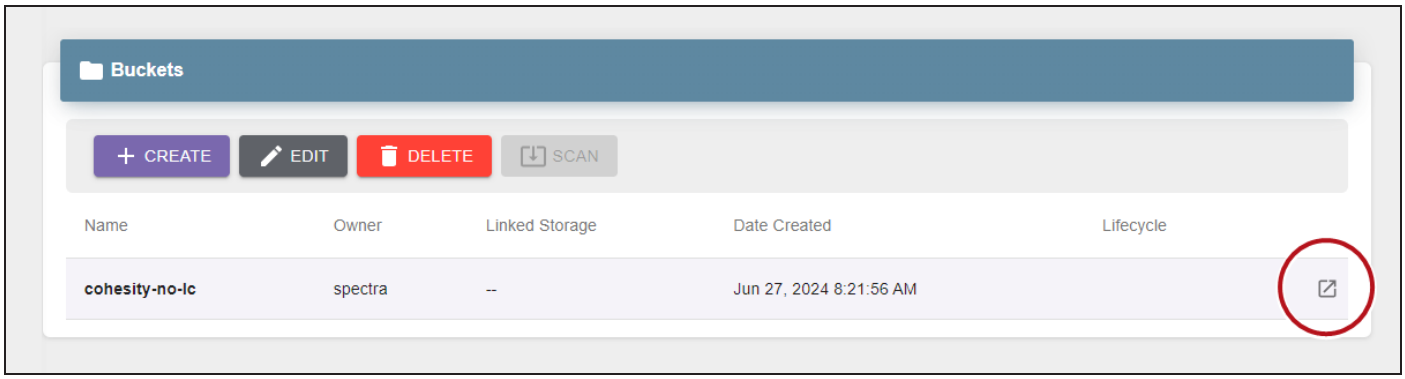

Figure 6 The Buckets pane.

3. Click **Properties**, **Usage**, **ACLs**, or **Policy** to view the current Vail bucket settings.

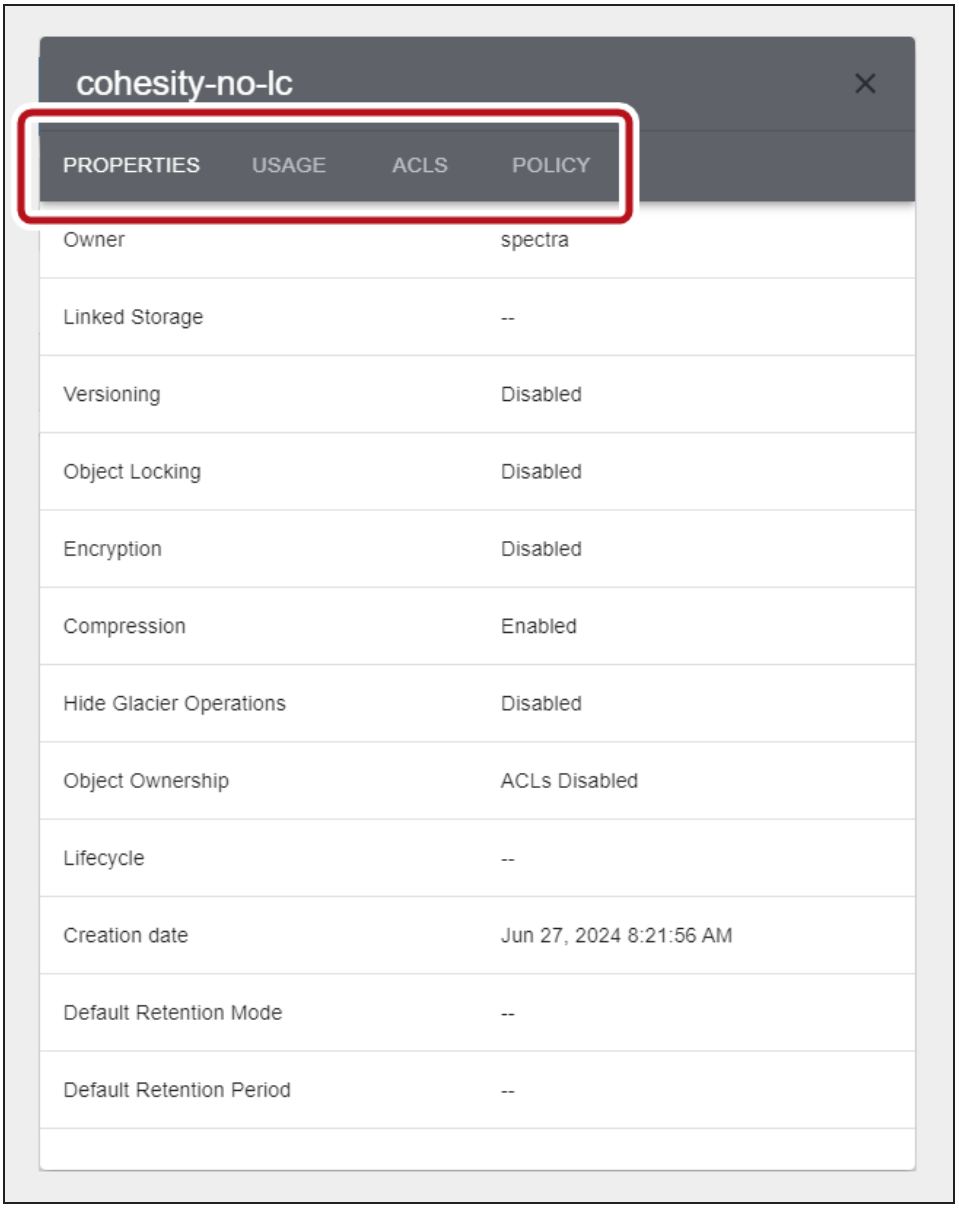

Figure 7 The Bucket Details - Properties screen.

- If you click **Properties**...

Field	Description
Owner	The AWS Canonical ID of the Vail bucket owner. By default the Vail sphere administrator is the bucket owner.
Linked Storage	The name of the bucket on the BlackPearl system or AWS cloud storage location to which the Vail bucket is linked, if applicable.
Versioning	Indicates if versioning is enabled or disabled for the Vail bucket.
Object Locking	Indicates if object locking is enabled or disabled for the Vail bucket.
Encryption	Indicates if encryption is enabled or disabled for the Vail bucket
Compression	Indicates if compression is enabled or disabled for the Vail bucket.
Hide Glacier Operations	Indicates if hiding glacier operations is enabled or disabled for the Vail bucket.
Object Ownership	Indicates the type of object ownership configured for the bucket
Lifecycle	The lifecycle associated with the Vail bucket.
Creation date	The date the Vail bucket was created.
Default Retention Mode	Indicates if default retention mode is enabled or disabled for the Vail bucket
Default Retention Period	The retention time period configured for the bucket.

- If you click **Usage**...

Field	Description
Number of Objects	The number of objects currently in the bucket.
Total Size of Objects	The current size of all objects in the bucket, in GiB.
Average Object Size	The current average size of the objects in the bucket, in GiB.

- If you click **ACLS**....

Field	Description
Block Public ACLs	Indicates if the Vail bucket blocks public ACLs.
Ignore Public ACLs	Indicates if the Vail bucket allows public ACLs.
AWS Canonical ID	The ID of a users configured with ACL permissions for the Vail bucket.
Permissions	The ACL permission level for the user.

- If you click **Policy**...

Field	Description
Block Public Policy	Indicates if the Vail bucket blocks or allows public policies.
Restrict Public Buckets	Indicates if the Vail bucket blocks or allows public buckets.
Policy	The AWS policy information entered when the bucket was created displays.

4. Click the **X** in the upper-right corner to close the window.

VIEW VAIL BUCKET CONTENTS

The buckets contents screen displays all objects in a Vail bucket. If versioning is enabled for the bucket, other versions of the current object can also be viewed.

Here is how to view the contents of a Vail bucket:

1. In the Vail management console taskbar, click **Buckets**.

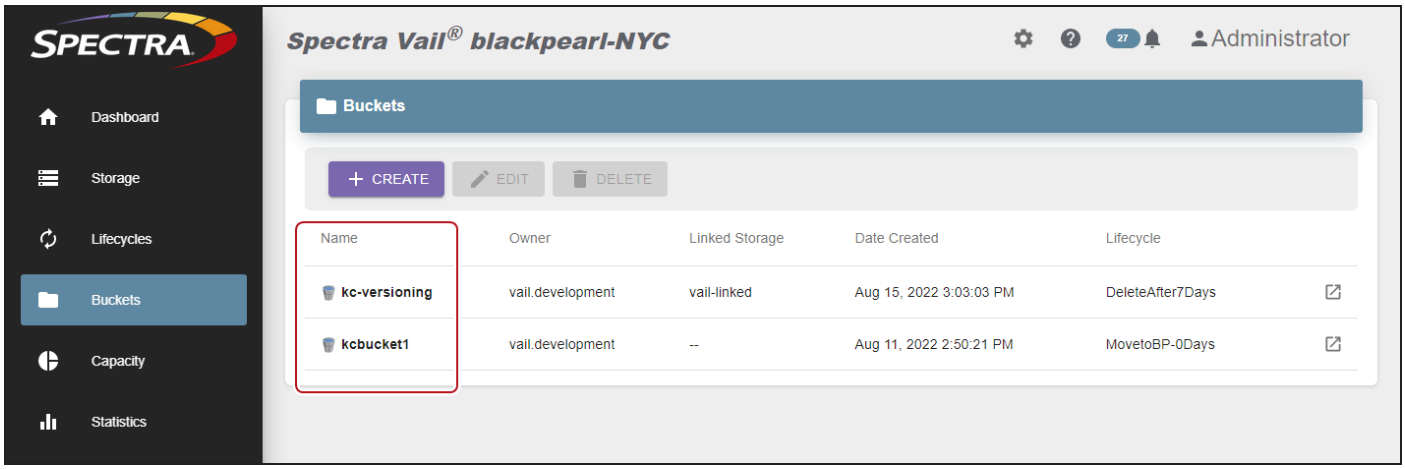

Figure 8 The Buckets screen.

2. Under the **Buckets** banner, click a ***bucket name***.

Note: You must click the name directly. Clicking the row of the bucket does not display the bucket contents screen.

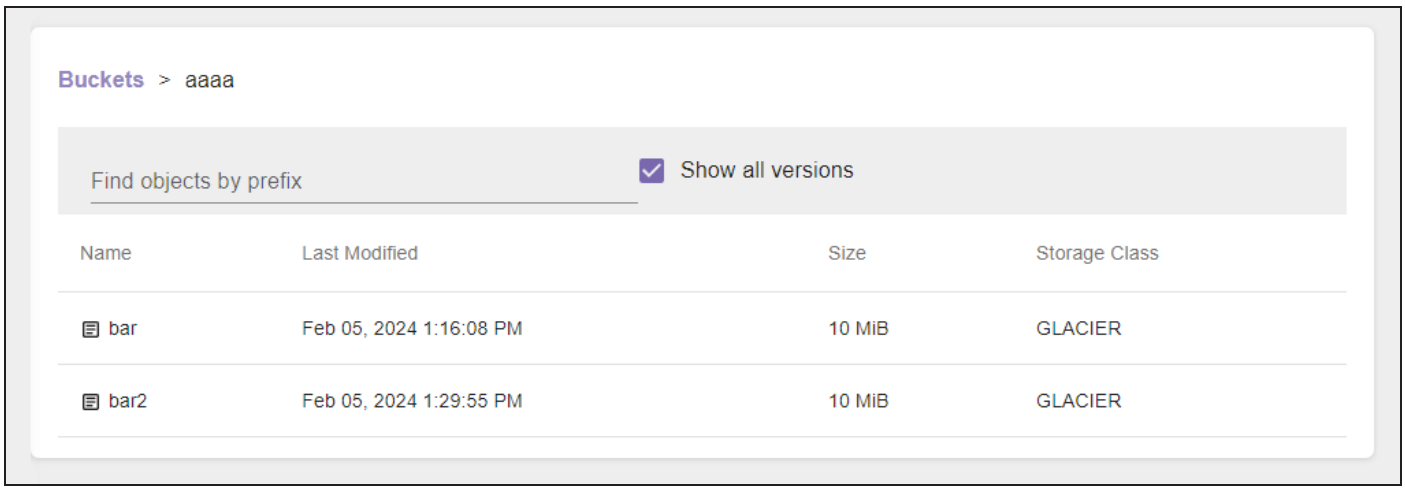

Figure 9 The Bucket Contents screen.

- Use the **Find objects by prefix** entry field to filter objects.

- Click **Show All Versions** to display every object version in the Vail bucket. The Last Modified field displays the day and time the object was uploaded.

Note: This option only displays if the bucket is configured for versioning.

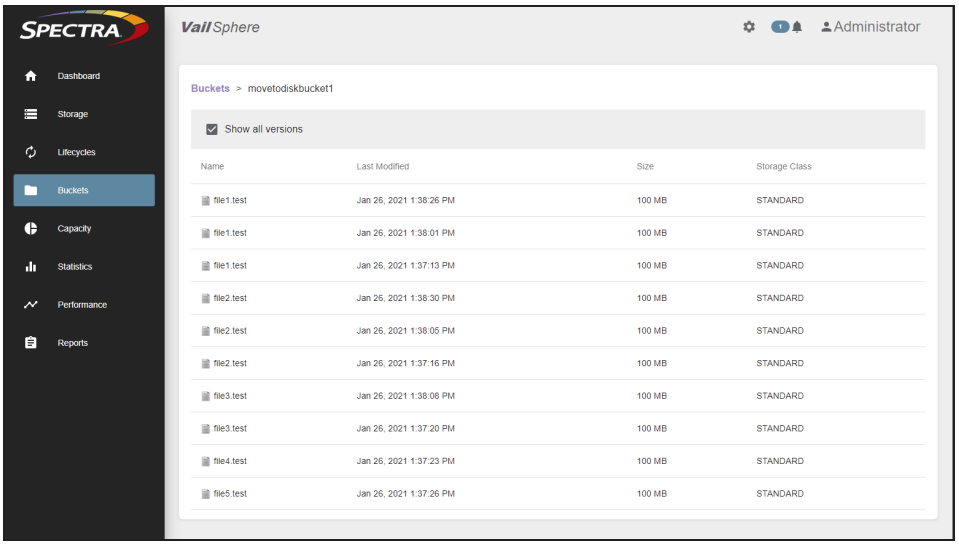

Figure 10 The Bucket Contents - Show All Versions screen.

3. Click **Buckets** in the upper-left corner of the pane to return to the Buckets screen.

View Object Details

On the Bucket Details screen, **click the row** of an object to view its details. By default, the **Properties** pane displays.

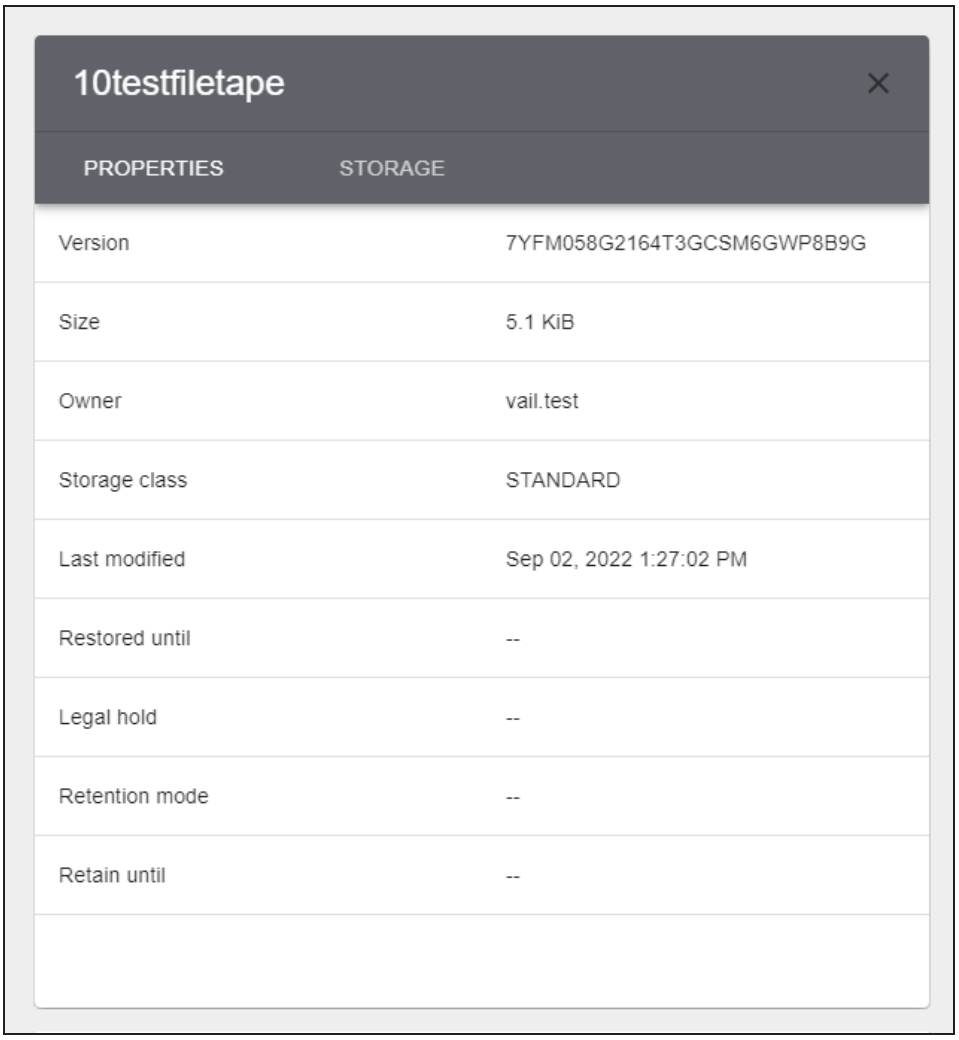

Figure 11 The Object Details - Properties screen.

Field	Description
Version	The UUID for the current version of the object.
Size	The object size on the storage target.
Owner	The AWS account name of the owner of the object.
Storage Class	The current storage class for the object.
Last Modified	The last modified date of the object.

Field	Description
Restored Until	The timestamp of when the object expires.
Legal Hold	Indicates if the object has a legal hold.
Retention Mode	Indicates the retention mode.
Retain Until	The duration that the object is retained by a legal hold.

Click **Storage** to display the current storage information for the object.

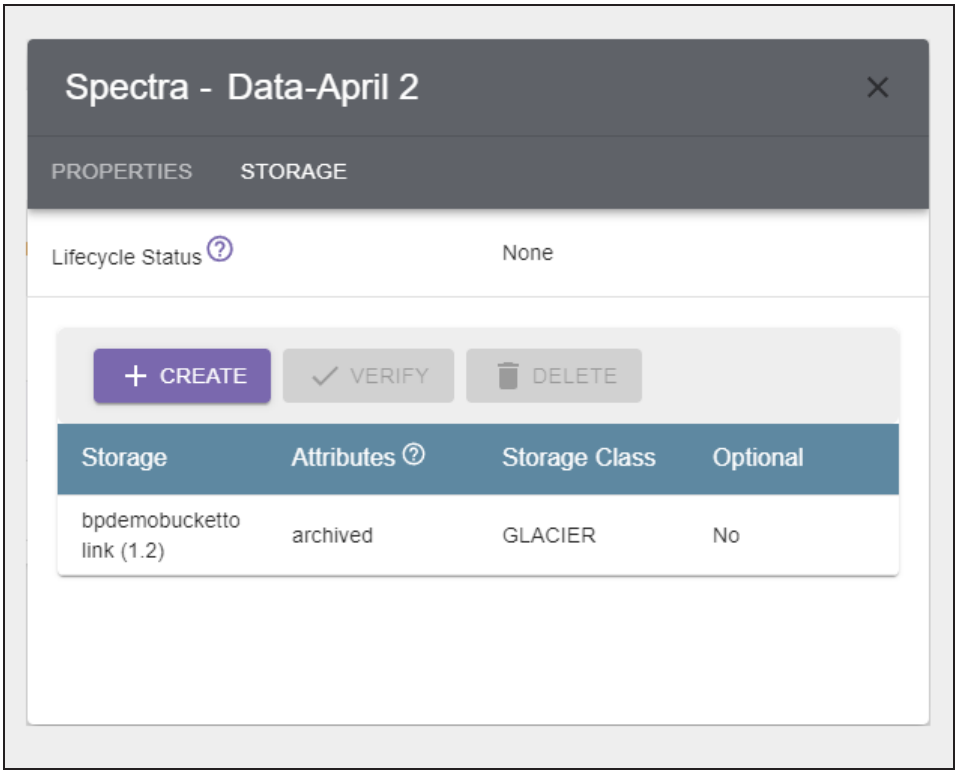

Figure 12 The Object Details - Storage screen.

Field	Description
Lifecycle Status	Indicates what Lifecycle-based changes are scheduled for the object.
Storage	The name of the storage endpoint where the object is stored. If the object is 256 bytes or less after compression, it is stored in the application database and not on a storage endpoint. The storage field is blank when the object is stored in the database.
Attributes	**Archived** - The object is archived and must be restored in order to be accessed. **Restored** - The object is restored can be accessed.
Storage Class	The current storage class for the object.
Optional	If yes, the clone is deleted when space is required.

CREATE AN OBJECT CLONE

If desired, you can delete a clone of an object in a Vail bucket using the Vail management console. You can only create an object clone if the object does not exist on all storage targets. You cannot have multiple clones on the same storage target.

Here is how to create an object clone using the Vail management console:

1. In the Vail management console taskbar, click **Buckets**.

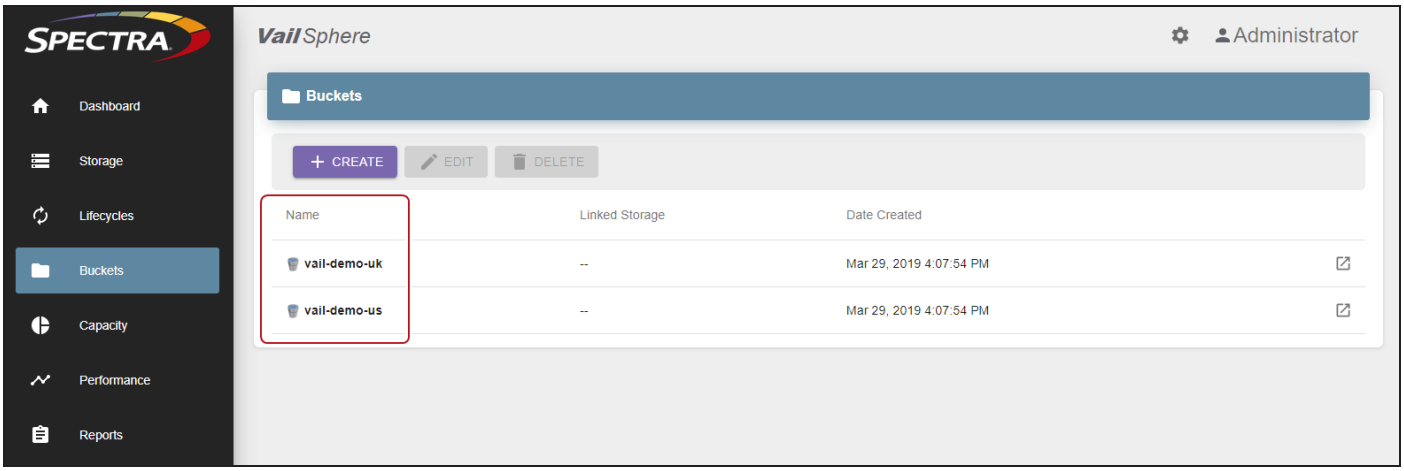

Figure 13 The Buckets screen.

2. Under the **Buckets** banner, click a **bucket name**.

Note: You must click the name directly. Clicking the row of the bucket does not display the bucket contents screen.

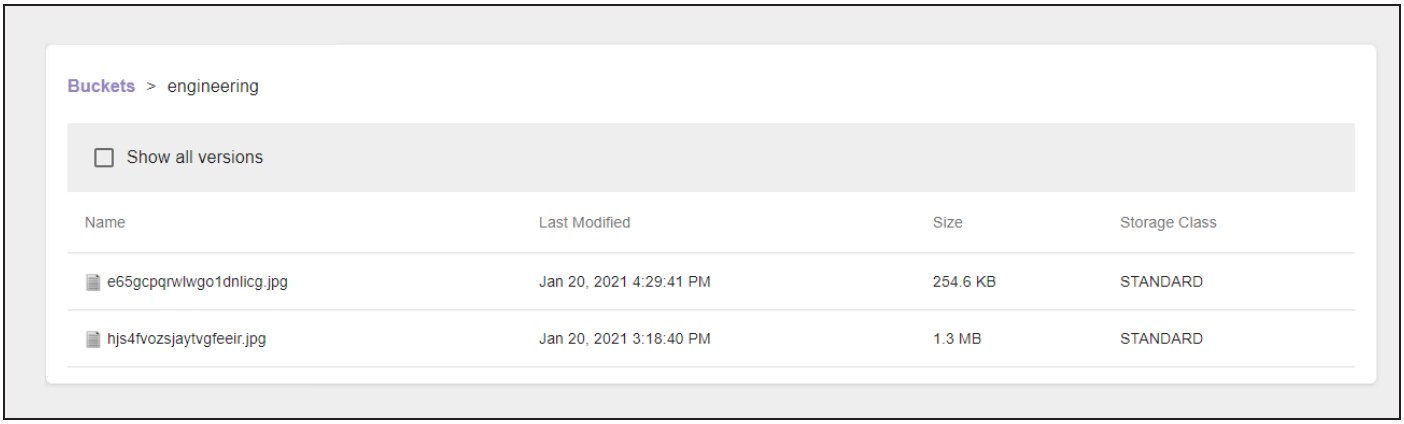

Figure 14 The Bucket Contents screen.

3. If necessary, click **Show All Versions** to display every object version in the Vail bucket. The Last Modified field displays the day and time the object was uploaded.

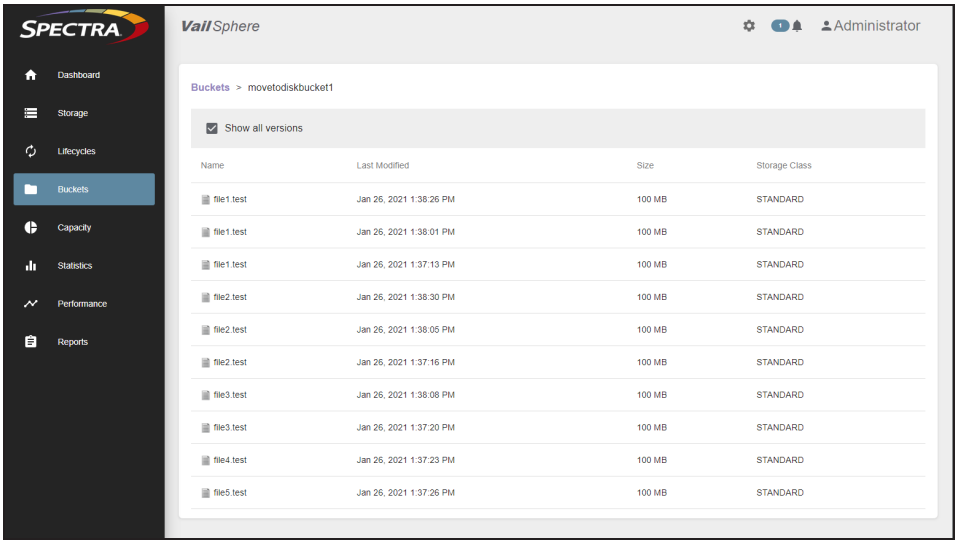

Figure 15 The Bucket Contents - Show All Versions screen.

4. **Click** the row of the object you want to clone. The Object Properties window displays.

5. Click the **Storage** tab.

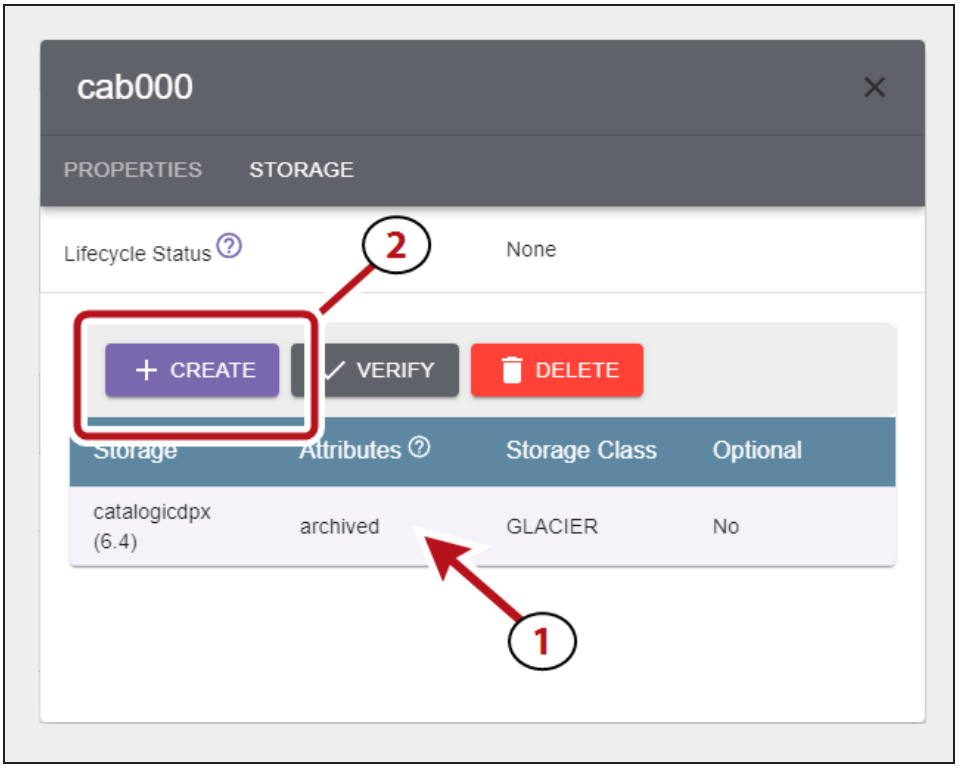

Figure 16 The Object Details - Storage screen.

6. Select the row of the object (**1**), and click **Create** (**2**).
7. Using the **Select Storage** drop-down menu, select a location to create the object clone.

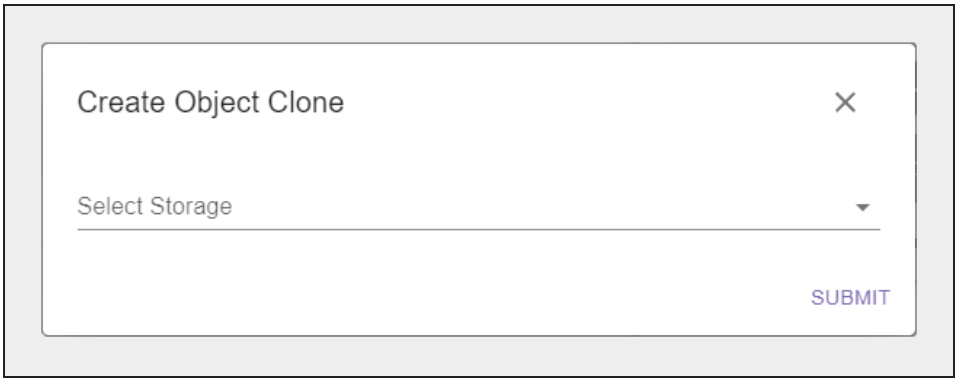

Figure 17 The Create Object Clone screen.

8. Click **Submit** on the confirmation screen to create an object clone.

VERIFY AN OBJECT CLONE

Here is how to verify an object clone using the Vail management console:

1. In the Vail management console taskbar, click **Buckets**.

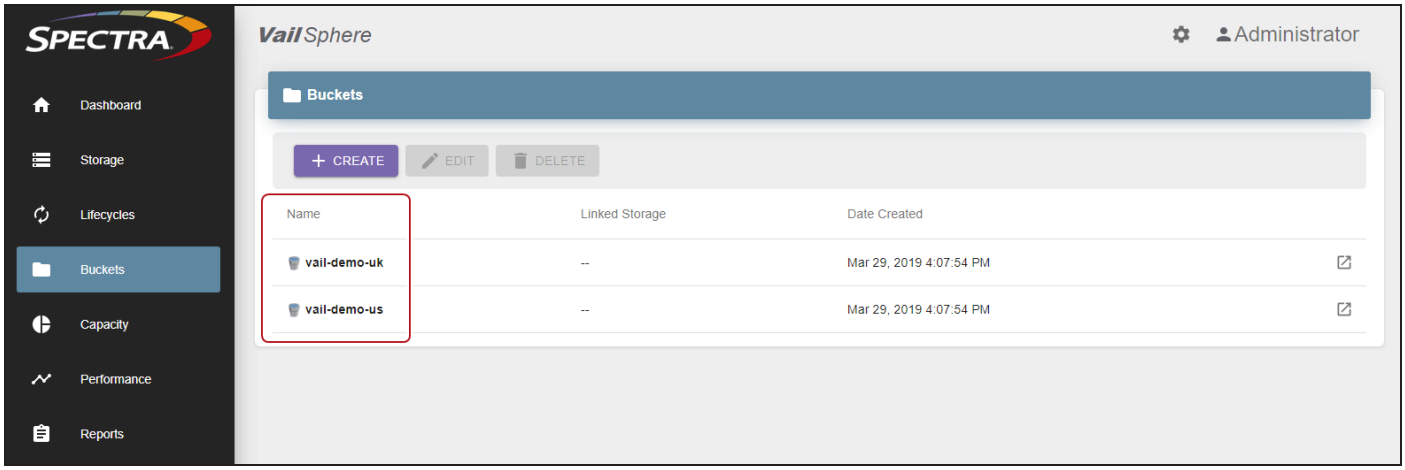

Figure 18 The Buckets screen.

2. Under the **Buckets** banner, click a **bucket name**.

Note: You must click the name directly. Clicking the row of the bucket does not display the bucket contents screen.

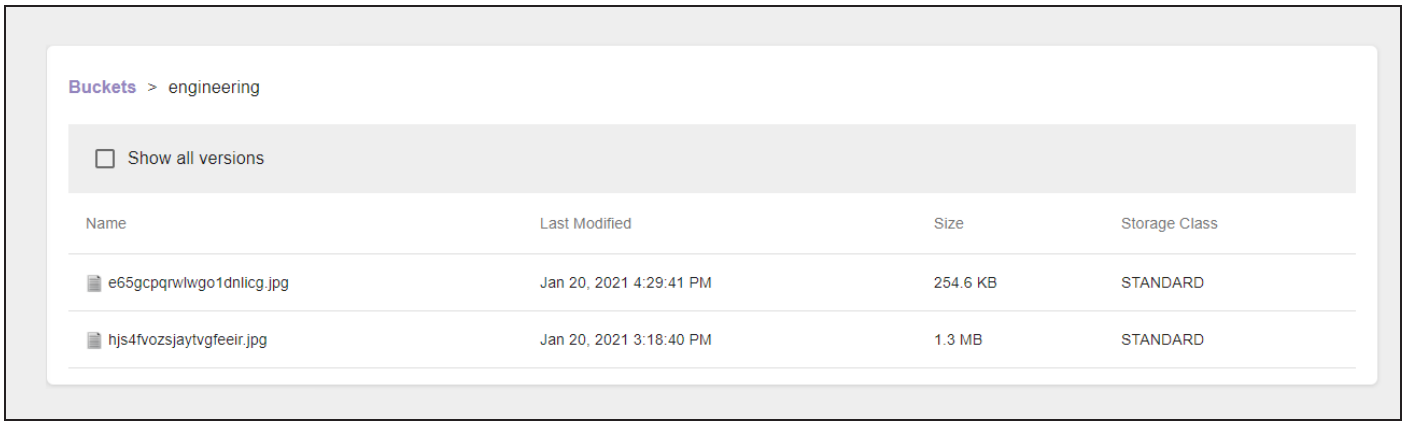

Figure 19 The Bucket Contents screen.

3. If necessary, click **Show All Versions** to display every object version in the Vail bucket. The Last Modified field displays the day and time the object was uploaded.

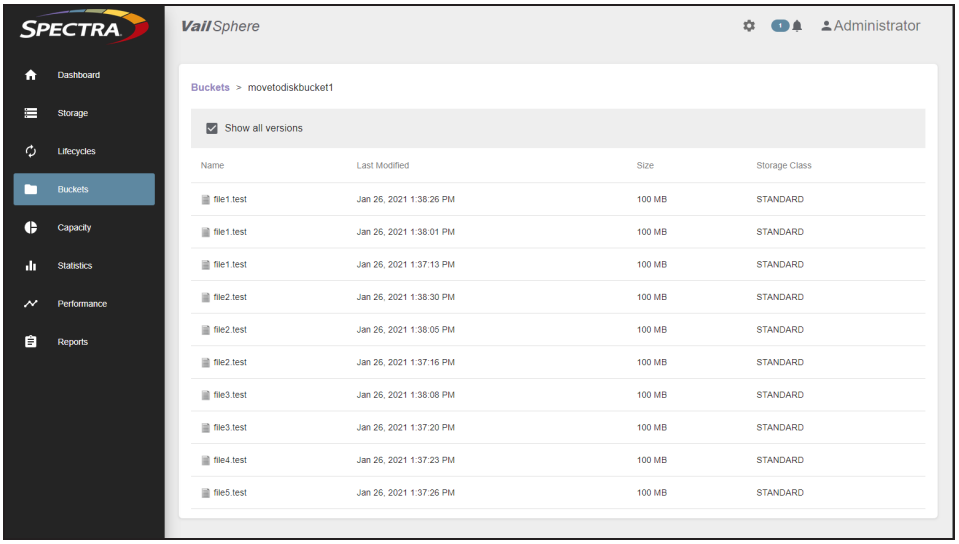

Figure 20 The Bucket Contents - Show All Versions screen.

4. **Click** the row of the clone you want to delete. The Object Properties window displays.
5. Click **Storage**.

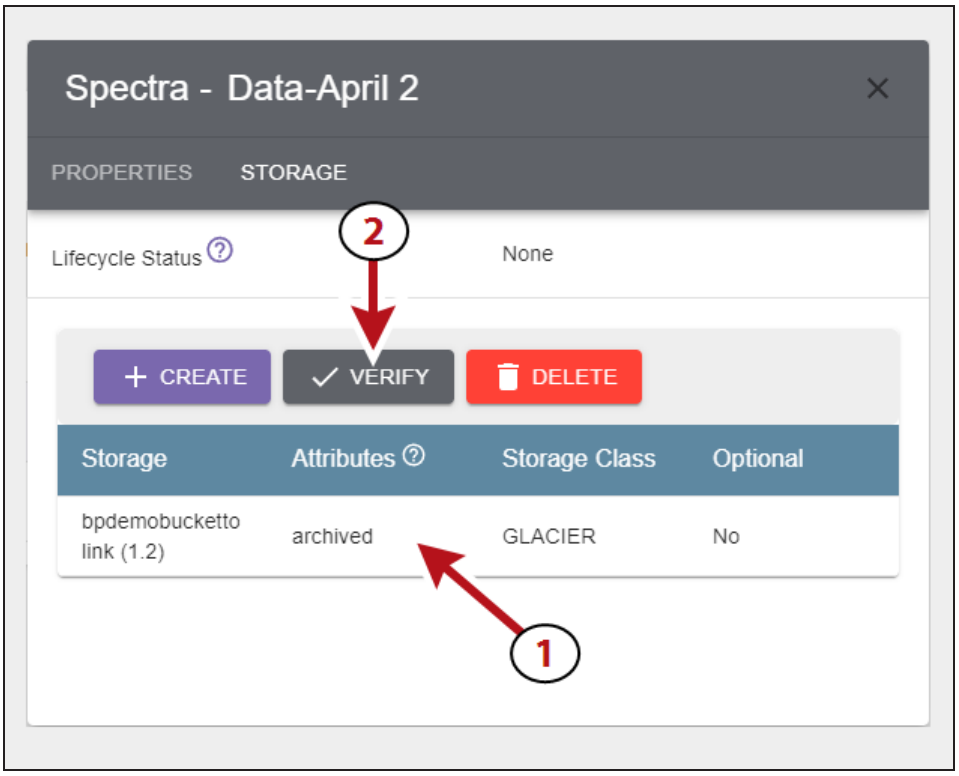

Figure 21 The Object Details - Storage screen.

6. Select the row of the clone (**1**), and click **Verify** (**2**).
7. Click **Submit** on the confirmation screen to verify the object clone.

DELETE AN OBJECT CLONE

If desired, you can delete a clone of an object in a Vail bucket using the Vail management console. You can only delete an object if another clone of the object exists elsewhere in the Vail sphere. If there is only one instance of the object in the sphere, it cannot be deleted.

Here is how to delete an object clone using the Vail management console:

1. In the Vail management console taskbar, click **Buckets**.

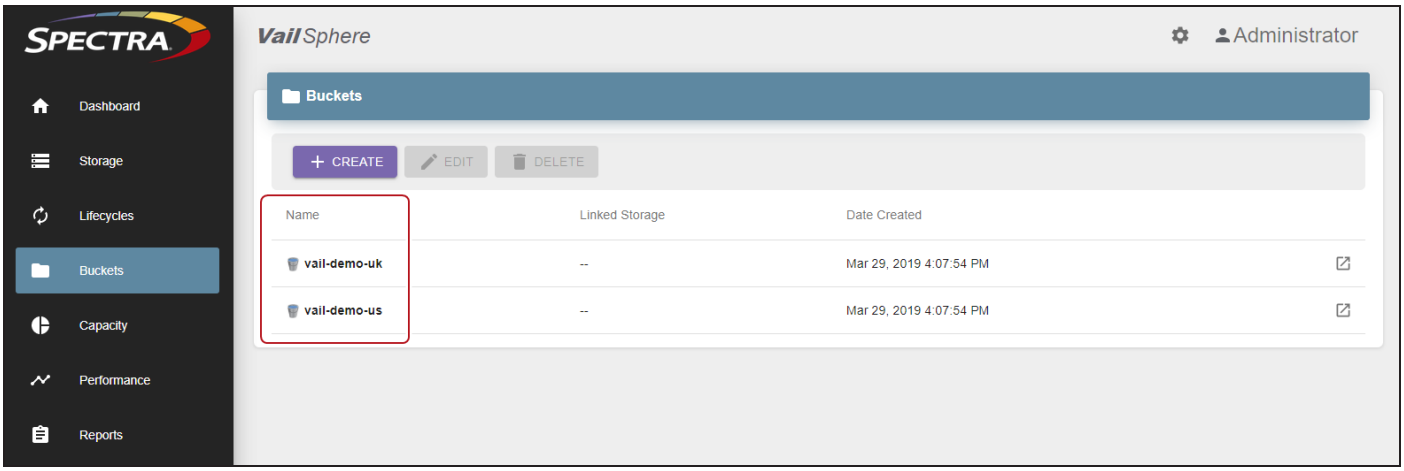

Figure 22 The Buckets screen.

2. Under the **Buckets** banner, click a **bucket name**.

Note: You must click the name directly. Clicking the row of the bucket does not display the bucket contents screen.

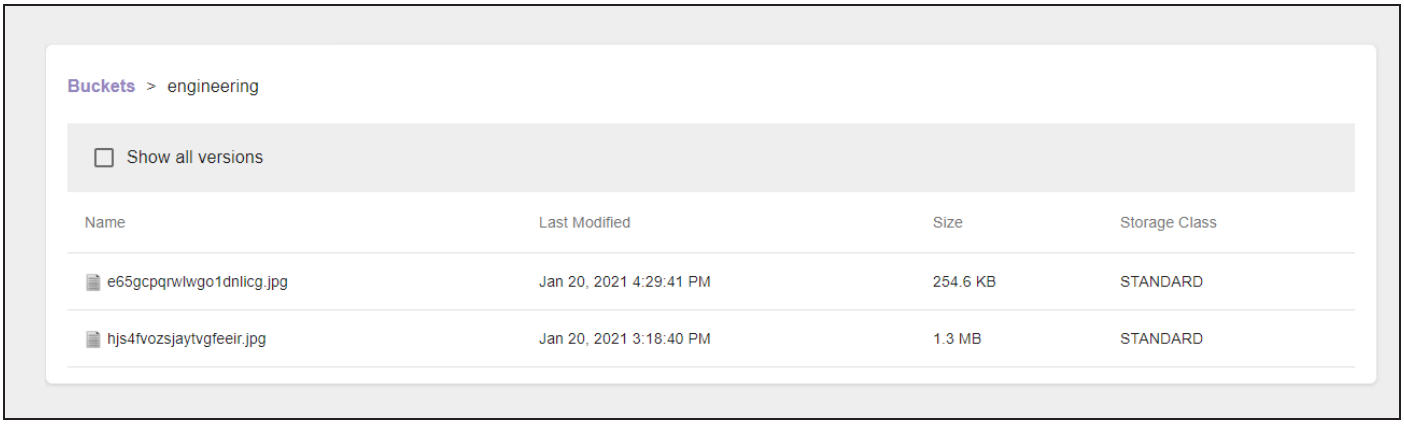

Figure 23 The Bucket Contents screen.

3. If necessary, click **Show All Versions** to display every object version in the Vail bucket. The Last Modified field displays the day and time the object was uploaded.

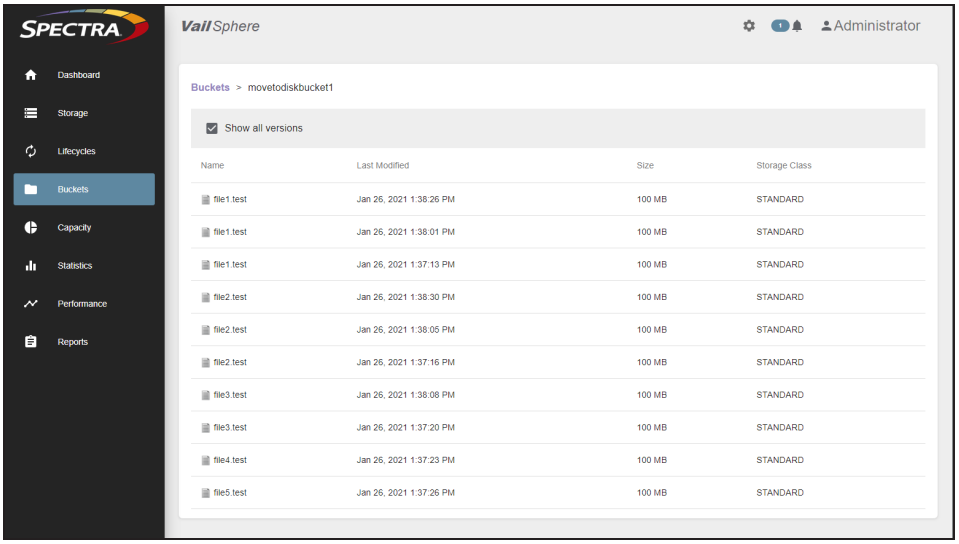

Figure 24 The Bucket Contents - Show All Versions screen.

4. **Click** the row of the clone you want to delete. The Object Properties window displays.
5. Click **Storage**.

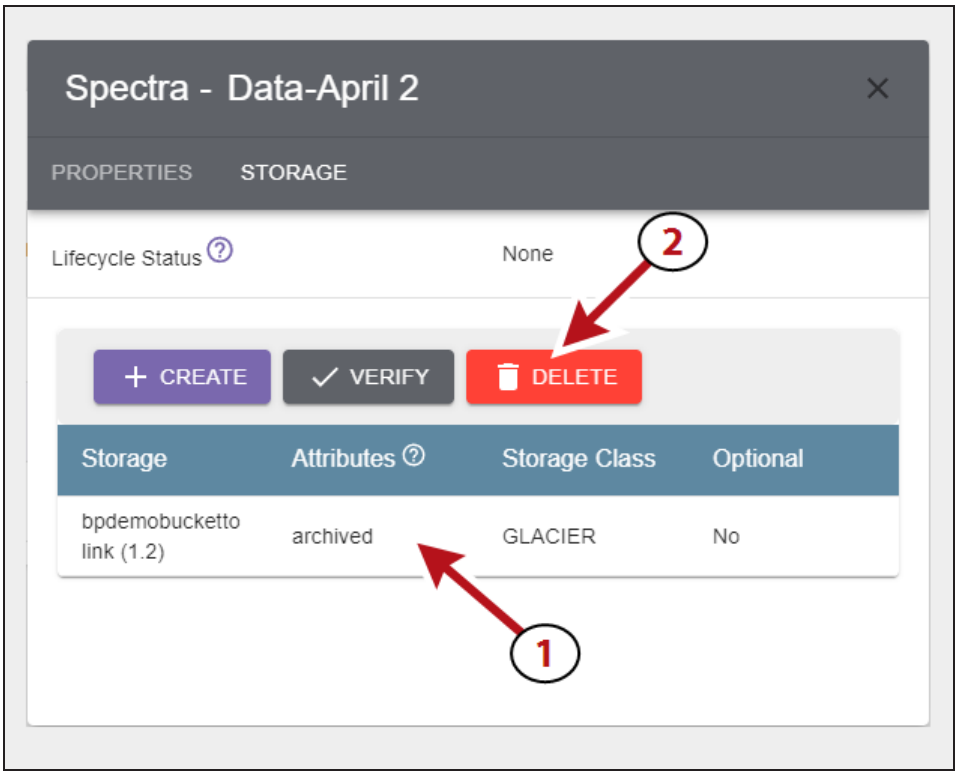

Figure 25 The Object Details - Storage screen.

6. Select the row of the clone (**1**), and click **Delete** (**2**).
7. Click **Delete** on the confirmation screen to delete the object clone.

CONSOLIDATE STORAGE

The consolidate storage function performs two tasks, consolidation of data packs and consolidation of metadata packs. Both tasks run when you consolidate storage, you cannot run one task separately.

Consolidate Storage Pack

This option is useful if you have deleted a large number of object clones and want to consolidate the partial data packs. The consolidate storage pack task runs everyday automatically at the scheduled daily processing time. You only need to consolidate storage packs manually if you do not want to wait for the daily processing schedule.

Consolidate Metadata Packs

This option is useful if you have third-party recovery enabled. The third-party recovery option writes daily metadata packs for use in recovering your data outside of the Vail environment. These metadata packs accumulate over time, so the consolidation of metadata packs merge these packs into the smallest number of metadata packs possible.

Note: The consolidate storage feature may take a long time depending on the number of objects.

Here is how you consolidate storage:

1. In the Vail management console taskbar, click **Storage**.
2. Under the **Endpoint Storage** or banner, (**1**) select the row of the storage, and (**2**) click **Consolidate**.

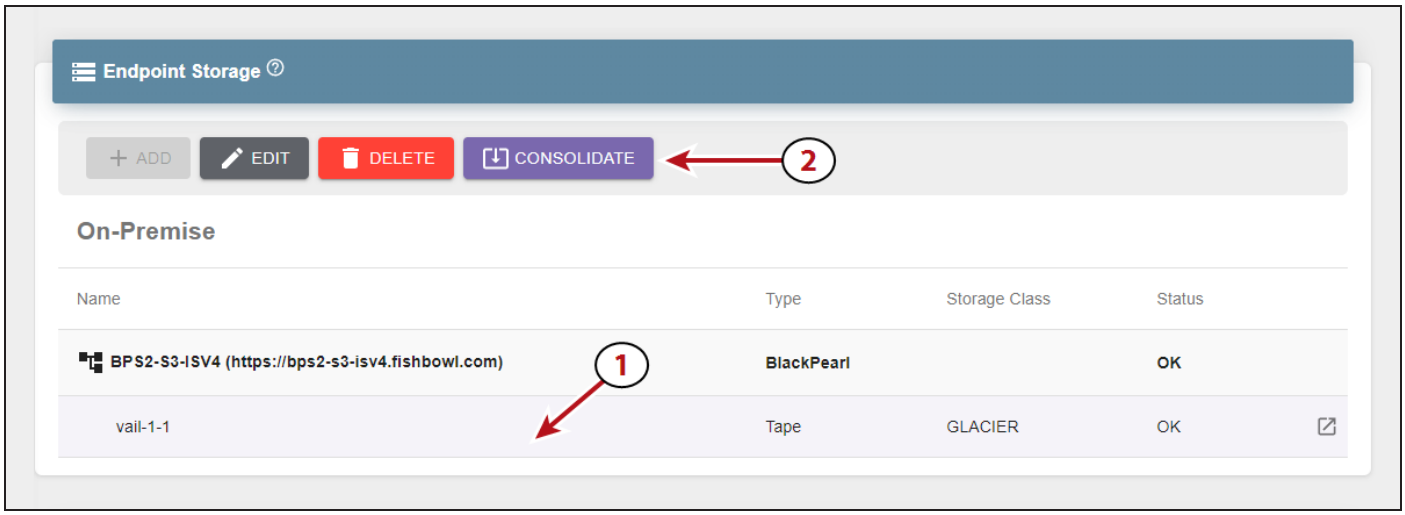

Figure 26 The Endpoint Storage pane.

3. On the confirmation screen, click **Consolidate**.

Note: The consolidate storage feature may take a long time depending on the number of objects.

VIEW LIFECYCLE DETAILS

The lifecycles detail screen displays information about the selected lifecycle, including all lifecycle properties and rules.

Here is how to view the details of a lifecycle:

1. In the Vail management console taskbar, click **Lifecycles**.
2. Under the **Lifecycles** banner, click the **View Details** icon on the right side of the pane for the lifecycle which you want to view details.

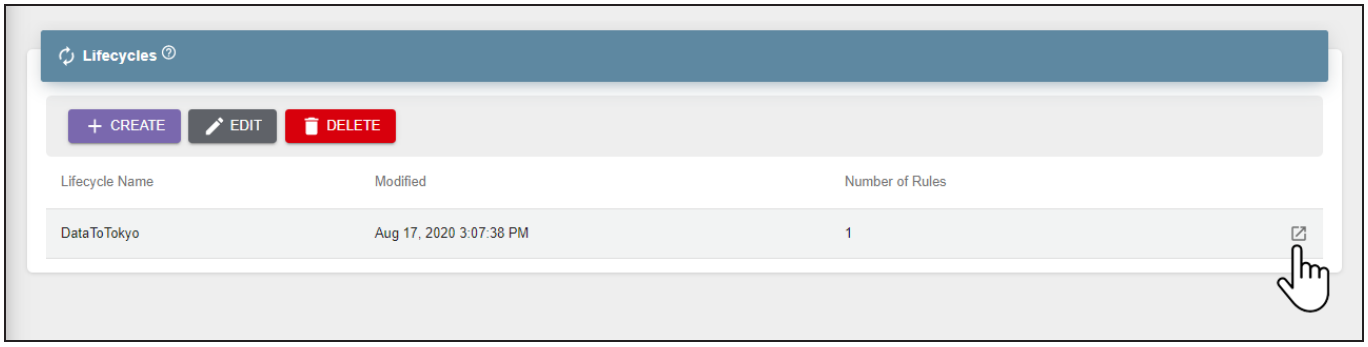

Figure 27 The Lifecycles pane.

3. Click **Properties** or **Rules** to view the current lifecycle settings. Click the **X** in the upper-right corner to close the window.

- The Properties screen:

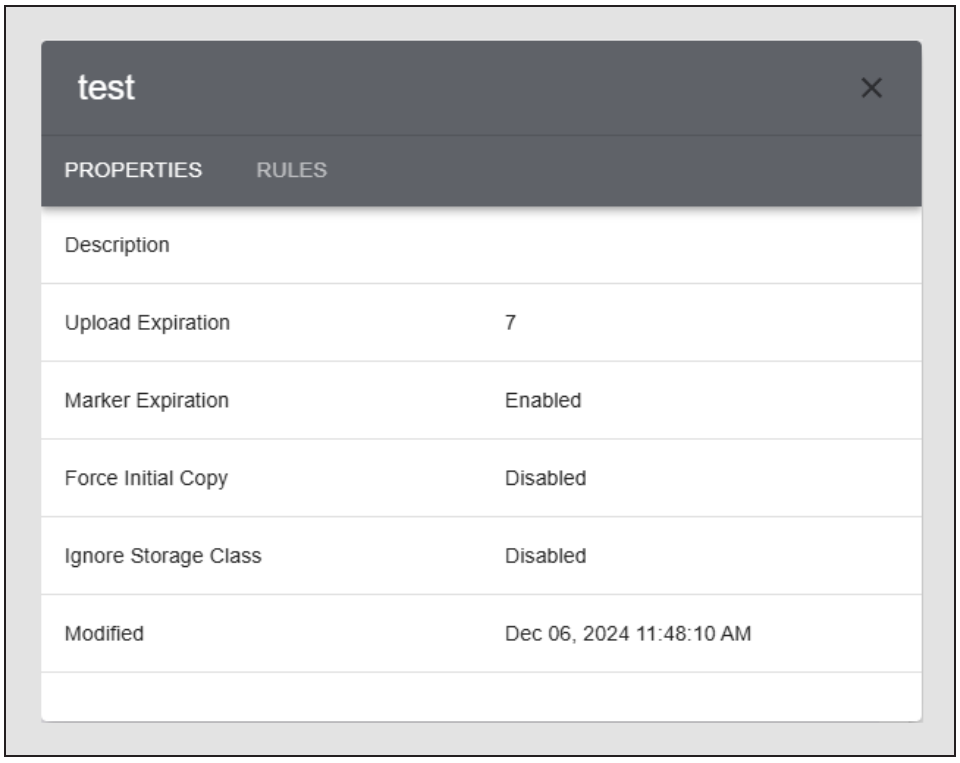

Figure 28 The Lifecycle Rule Details - Properties screen.

Field	Description
Description	The text, if any, entered in the Description field when creating the bucket.
Upload Expiration	The number of days that must pass before a multipart upload is aborted. When a multipart upload is aborted, it deletes all parts associated with the upload, which prevents remaining incomplete uploads from being stored.
Marker Expiration	Indicates if the Delete Marker Expiration option is **Enabled** or **Disabled**.
Force Initial Copy	Indicates if the lifecycle is configured to initially place data as STANDARD storage. Additional clones are created immediately as GLACIER storage.
Ignore Storage Class	Indicates if the lifecycle is configured to ignore the storage class requested in a PUT or upload operation and instead use the configured storage class of the selected storage endpoint.
Modified	The date and time the lifecycle was last modified.

- The Rules screen:

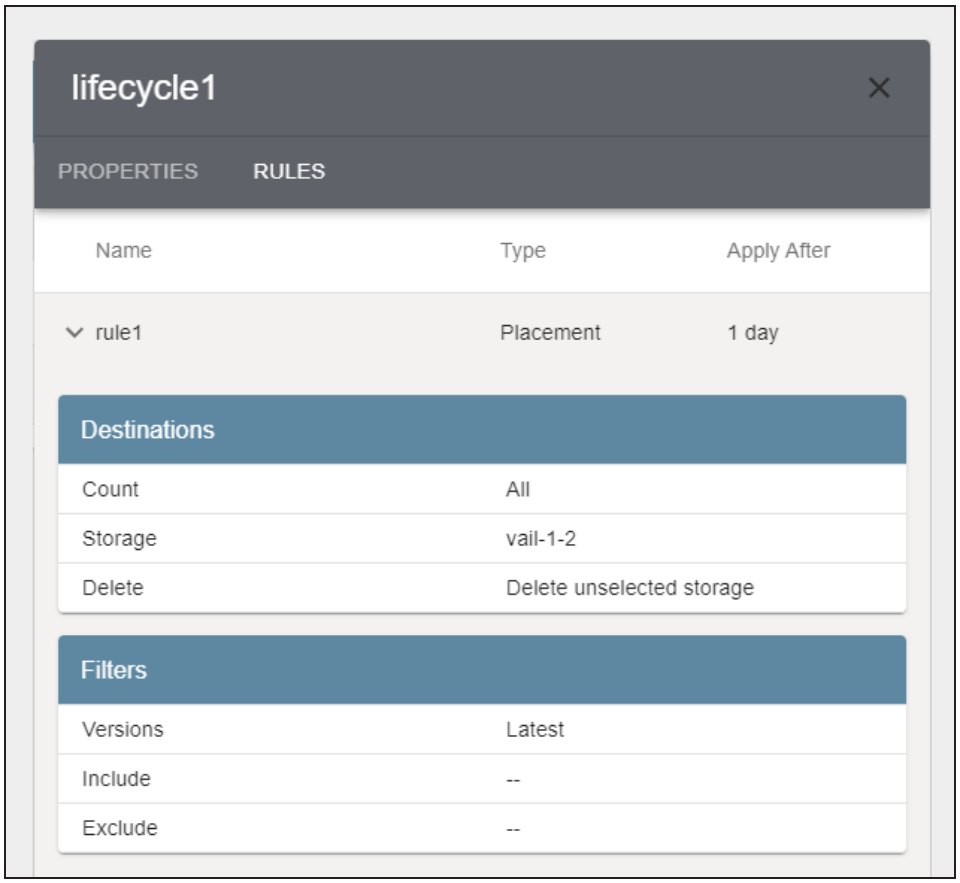

Figure 29 The Lifecycle Rule Details - Rules screen.

Field	Description
Name	The name of the lifecycle.
Type	The type of lifecycle rule. **Values:** Clone, Move, Expiration.
Apply After	The number of days before the lifecycle rule is applied.
Destinations - Count	The number of destinations configured for the lifecycle. **Values:** 1-5, All.
Destinations - Storage	The storage endpoint(s) used by the lifecycle.
Destinations - Delete	Whether or not the lifecycle is configured to delete clones on storage destinations that are not configured in the lifecycle.
Filters - Versions	The versioning setting configured for the lifecycle.
Filters - Include	The text string used to filter objects to include in storage operations.
Filters - Exclude	The text string used to filter objects to exclude from storage operations.

VIEW REPORTS

The Reports screen allows you to view any existing audit logs for the Spectra Vail application, and detailed information for each audit log.

- In the Vail management console taskbar, click **Reports**.

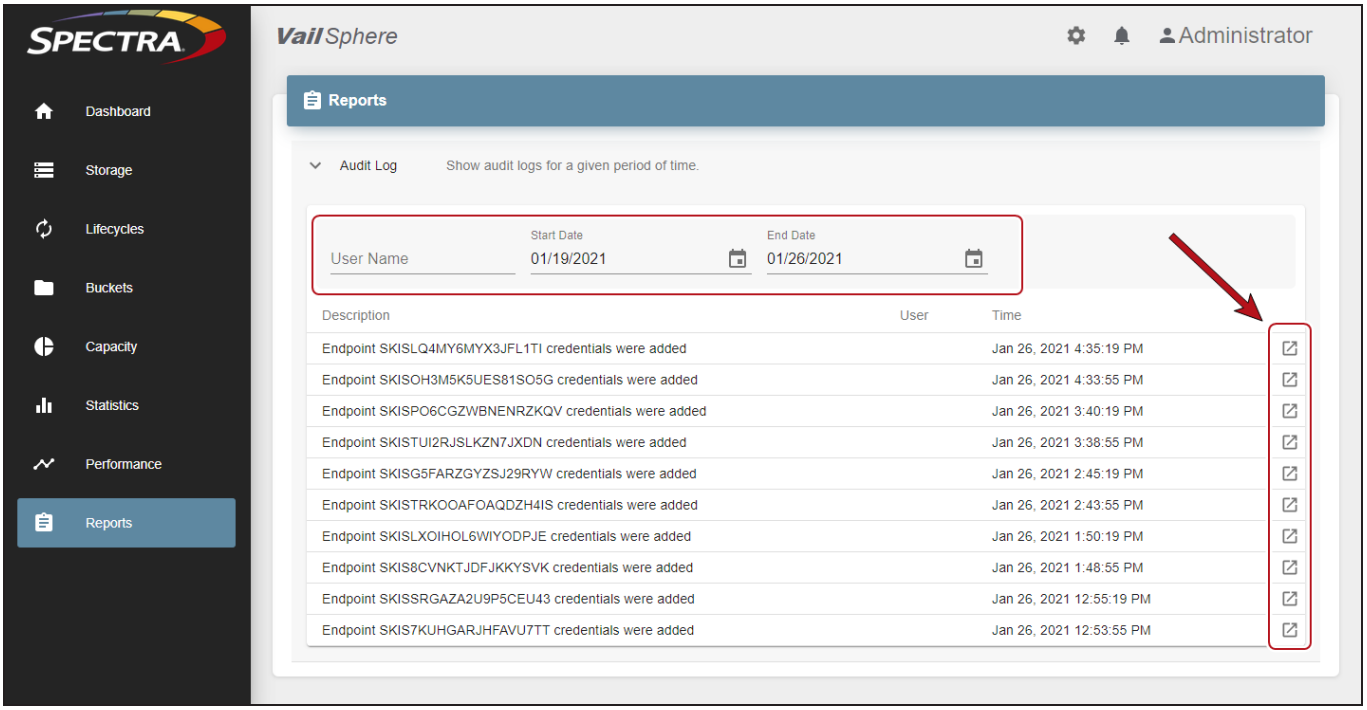

Figure 30 The Reports screen.

- Use the **User Name**, **Start Date**, or **End Date** menus to refine the list of audit logs.

  Note: Not all audit logs contain a User Name.

- Click the **View Details** icon on the right end of each audit log row to view details about the audit log.

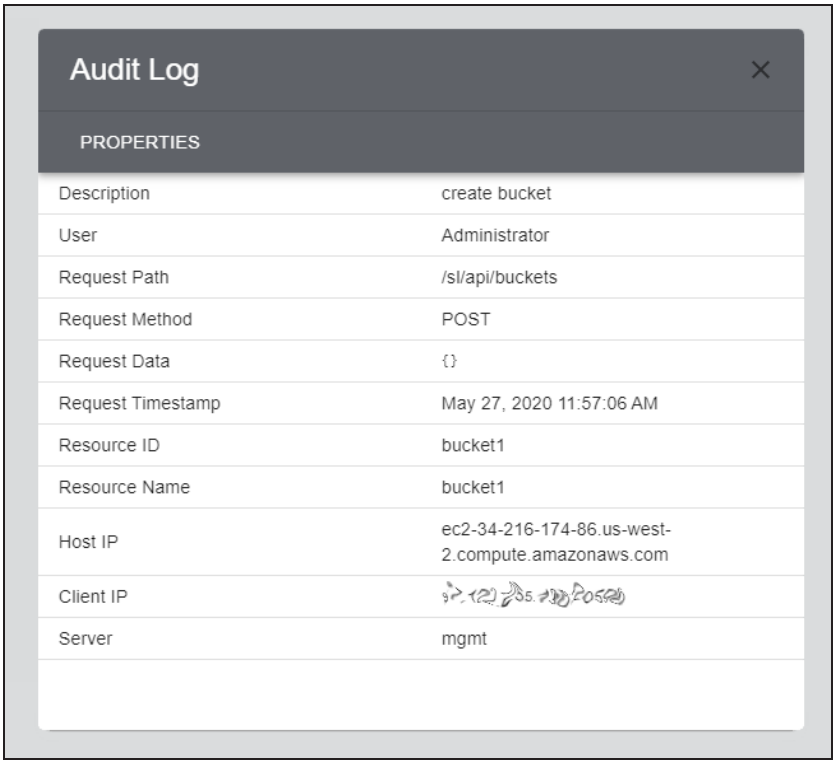

Figure 31 The Audit Logs details screen.

Option	Description
Description	The description of the audit log.
User	The user associated with the log.
Request Path	The API path for the log.
Request Method	The method by which the log was generated.
Request Data	The contents of the log.
Request Timestamp	The time and date the log was generated.
Resource ID	The ID of the resource associated with the log.
Resource Name	The name of the resource associated with the log.
Host IP	The IP address of the Vail sphere.
Client IP	The IP address of the BlackPearl system or Vail VM node associated with the log.
Server	The name of the resource within the Vail sphere.

View Spectra Vail Application Messages

Spectra Vail application messages provide important information about the status and current functionality of the Vail sphere. If desired, you can configured sphere administrators to receive messages automatically.

Here is how to view messages:

In the upper right corner of the management console, click the **bell icon**. The value to the left of the icon indicate the number of unread messages.

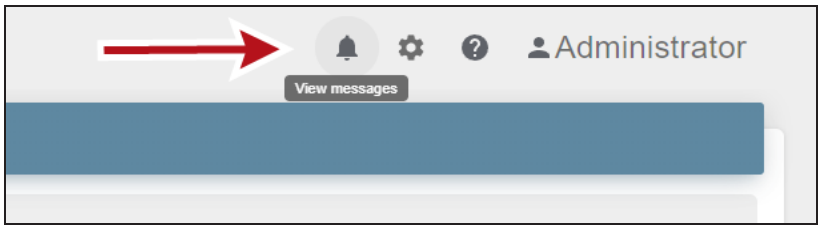

Figure 32 The Bell icon.

The messages screen displays. Any unread messages are shown in bold font.

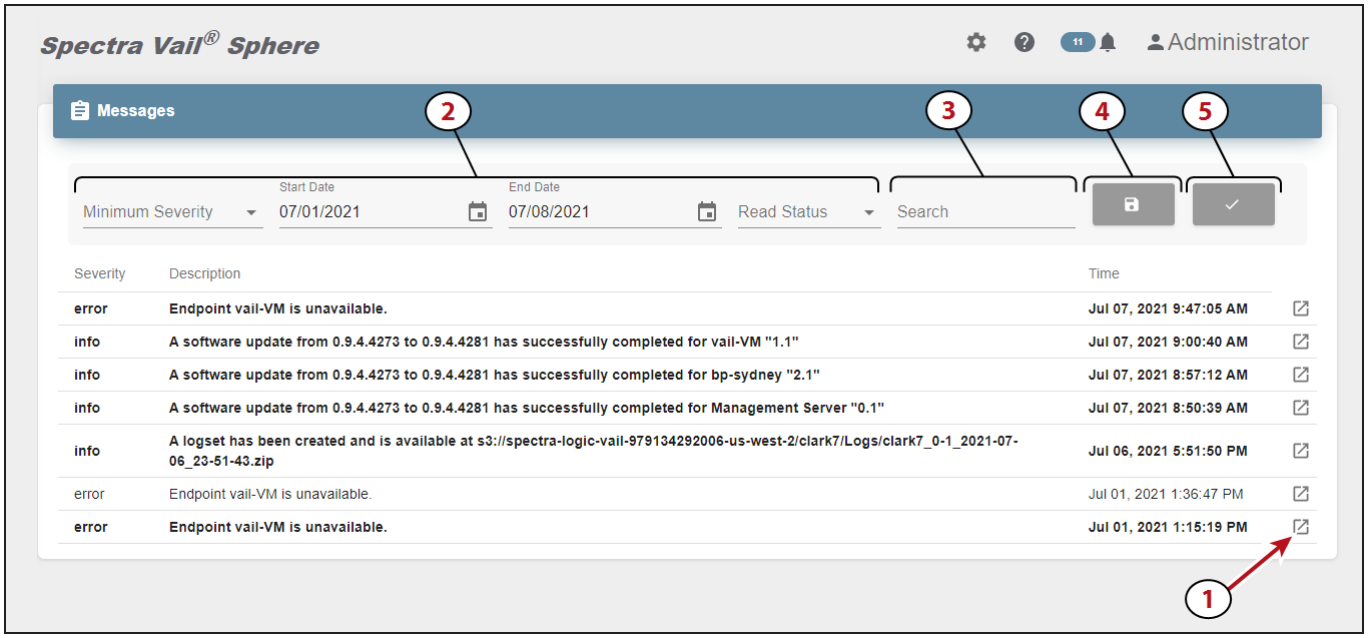

Figure 33 The Messages screen.

- To view message details, on the right end of the message row, click the **View Details** icon (**1**).
- You can sort messages using the **Minimum Severity**, **Start Date**, **End Date**, and **Read Status** drop-down menus (**2**).
- You can search messages for a text string by typing in the **Search** field (**3**).
- To download messages to your local host, in the upper-right corner of the Messages pane, click the **disk icon** (**4**).
- To mark all messages as read, in the upper-right corner of the Messages pane, click the **check mark icon** (**5**).

Message Details

In addition to the information on the Messages screen, the message details pane also displays the message key.

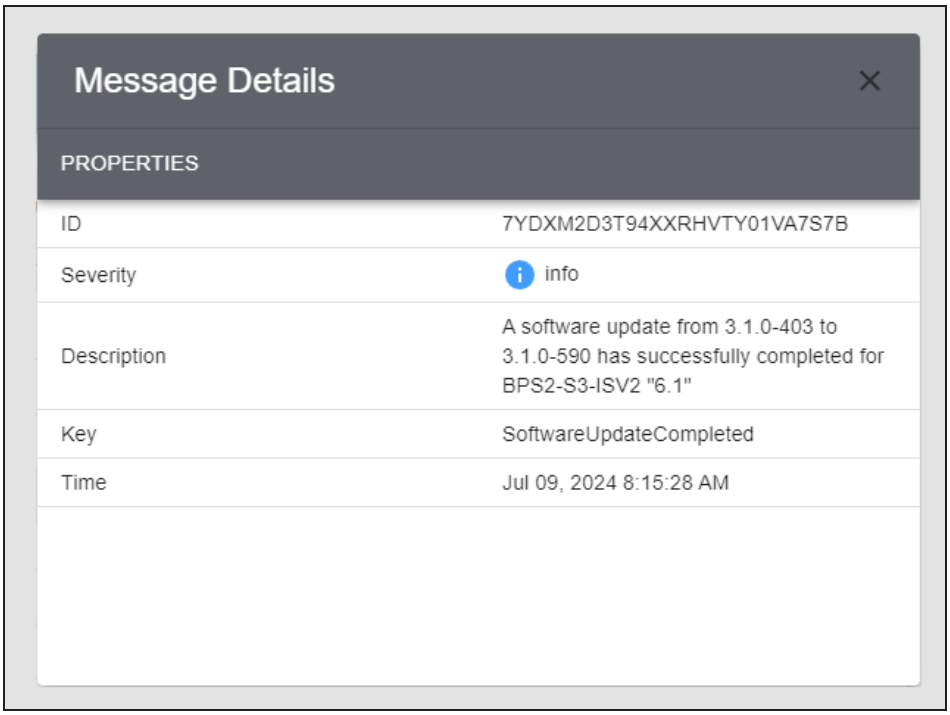

Figure 34 The Message Details screen.

Field	Description
ID	The ID value of the message.
Severity	The severity of the message. **Info** - an event occurred such as a successful firmware update of the Vail sphere. **Warning** - An event that may affect data transfers occurred, such as the Vail sphere detects a down-level firmware version. **Error** - An event that prevents data transfers occurred, such as the nonavailability of a storage endpoint.
Description	The message description.
Key	The message key. This value is useful when using the REST API to gather messages.
Time	The date and time the message was generated.

SPECTRA VAIL APPLICATION LOGS

Use the Logs page to generate and download logs for use in troubleshooting problems with the Vail sphere.

In the upper right corner of the Vail management console, click the **gear icon** and select **Logs**.

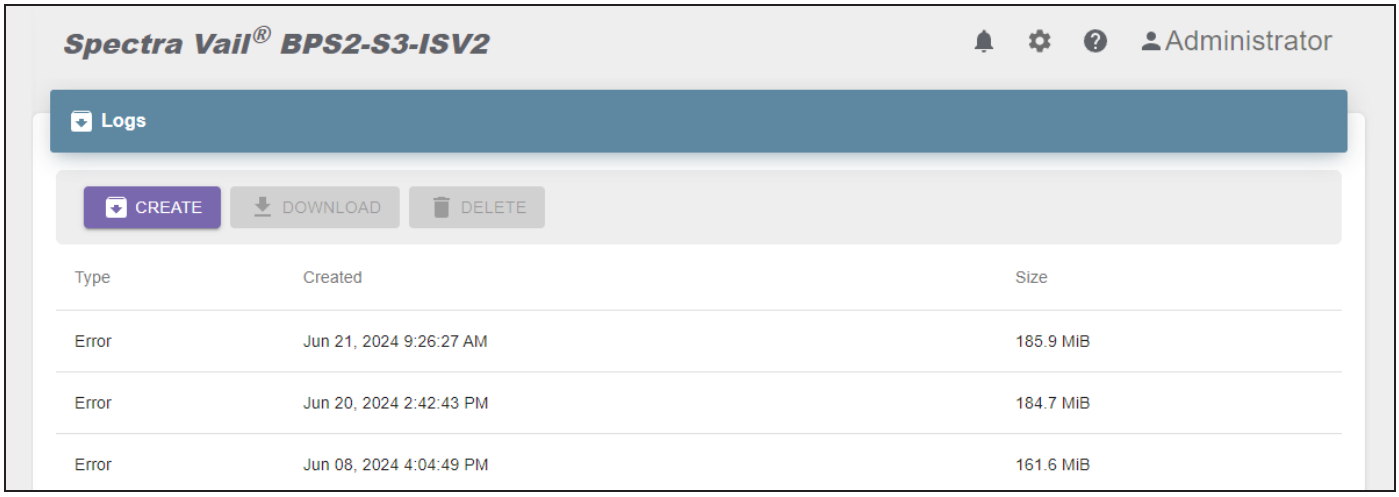

Figure 35 The Logs screen.

- To download an existing logset, select the row of the logset and click **Download**.
- To delete an existing logset, select the row of the logset and click **Delete**.

ACCESSING THE TECHNICAL SUPPORT PORTAL

The Spectra Logic® Technical Support portal provides access to the Knowledge Base, the current version of Vail software, and additional service and support tools. You can also open or update a support incident and upload log files.

Create an Account

Access to *User Guides* and compatibility matrices does not require you to create an account. You must create a user account and log in to access *Release Notes*, to download the latest version of Vail software, or to open a support incident.

Note: If you have multiple Spectra Logic products, the serial numbers for all products will be associated with your account. If you do not see the serial numbers for all of your products when you log in, contact Technical Support (see Contacting Spectra Logic).

1. Access the Technical Support portal login page at *support.spectralogic.com*.
2. On the home page, click **Register Now**.

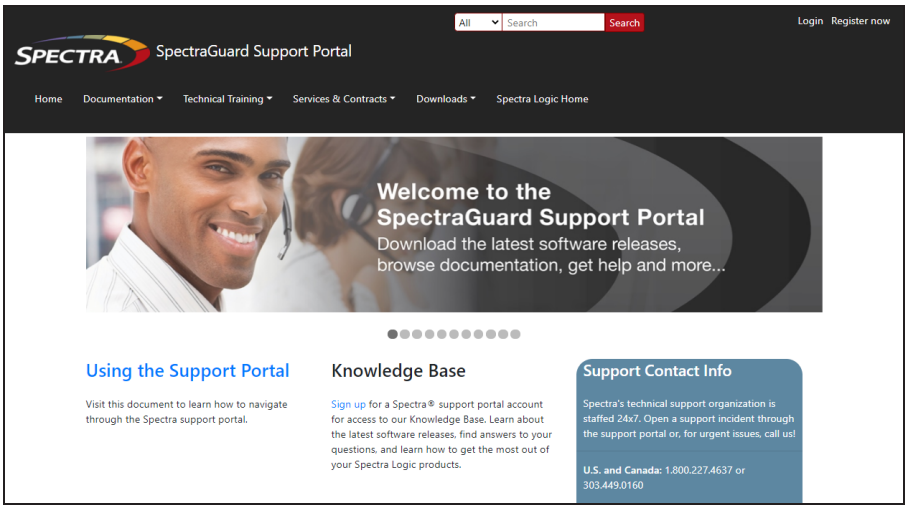

Figure 36 The Spectra Logic Technical Support portal home page.

3. Enter your registration information. Your account is automatically associated with the serial numbers of all Spectra Logic products owned by your site.

- If you have an invitation, follow the link and enter the invitation code.

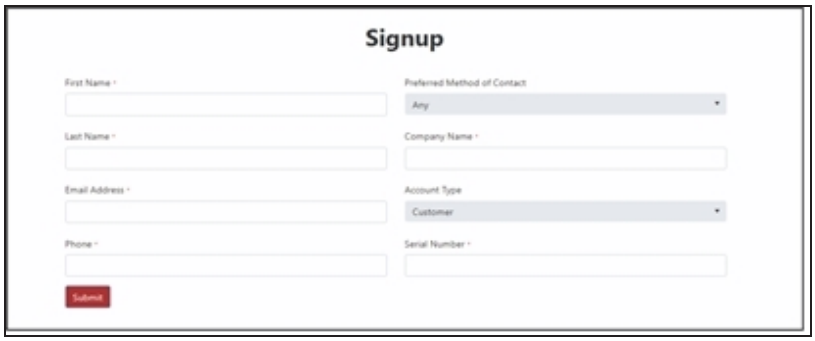

Figure 37 The Signup screen.

- If you do not have an invitation, enter the requested information to create your account. When you are finished, click **Submit**.

When the account is approved, you receive an email with an initial password. Use your email address and the password provided in the email to log in to your account. After you log in, you can change your password if desired.

Log Into the Portal

1. Access the Technical Support portal login page at *support.spectralogic.com*.
2. Use your email address and password to log into the Technical Support Portal.

Opening a Support Ticket

You can open a support incident using the Spectra Logic Technical Support portal or telephone.

- To contact Spectra Logic Technical Support by telephone, see Contacting Spectra Logic.
- Use the following instructions to open a support incident through the portal:

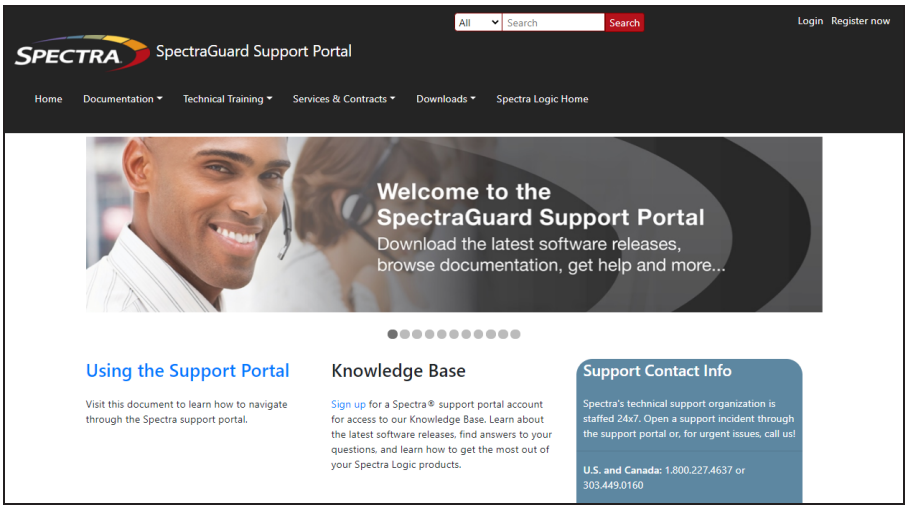

Figure 38 The Spectra Logic Technical Support portal home page.

1. Make notes about the problem, including what happened just before the problem occurred.
2. Gather the following information:
   - Your Spectra Logic customer number
   - Company name, contact name, phone number, and email address
   - The software serial number
   - Type of host system being used
   - Type and version of host operating system being used
   - Type and version of host storage management software being used
1. Access the Technical Support portal login page at *support.spectralogic.com*.
2. If necessary, log in to the Support Portal by clicking **Login**, enter your **email address** and **password**, and click **Log in**.

Note: See Create an Account on page 38 if you have not previously created an account on the Technical Support portal.

3. Submit a support incident.

- Use the following instructions to search for help before submitting a ticket, or skip to Submit an Incident Directly on page 43.

    i. From any page, select **Incident>Incidents & Inventory**.

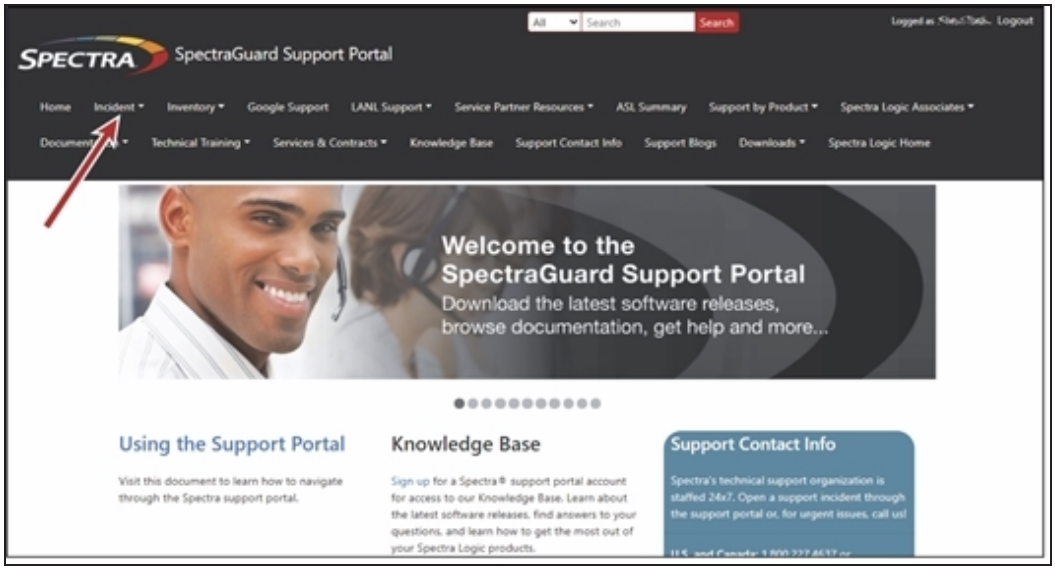

Figure 39 Select **Incidents>Incidents & Inventory**.

    ii. Select **Open or View Incidents**.

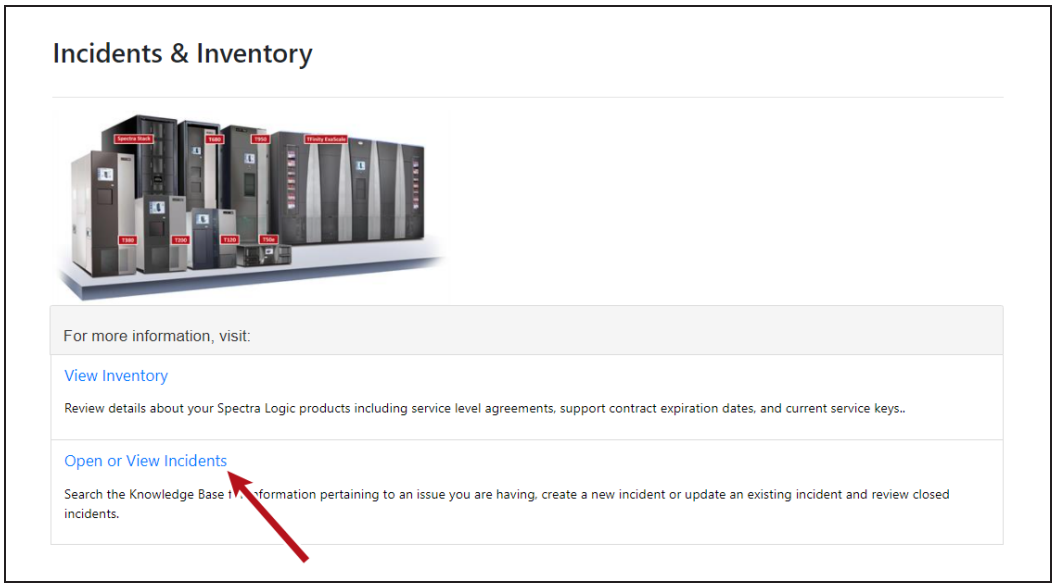

Figure 40 Select **Open or View Incidents**.

iii. In the Search dialog box, enter a term or phrase about your problem (**1**) and click **Search** (**2**).

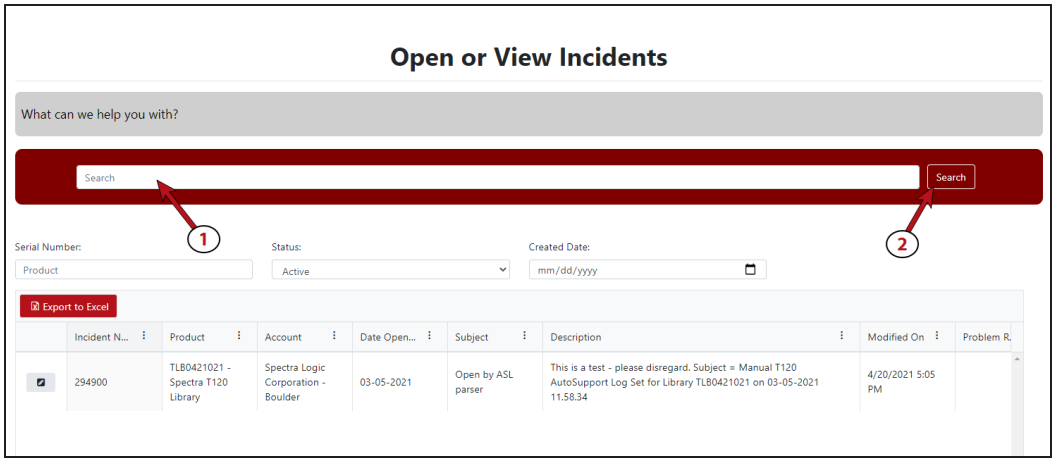

Figure 41 Enter a search phrase and click **Search**.

iv. If the search does not provide an answer, click **Open a New Incident**.

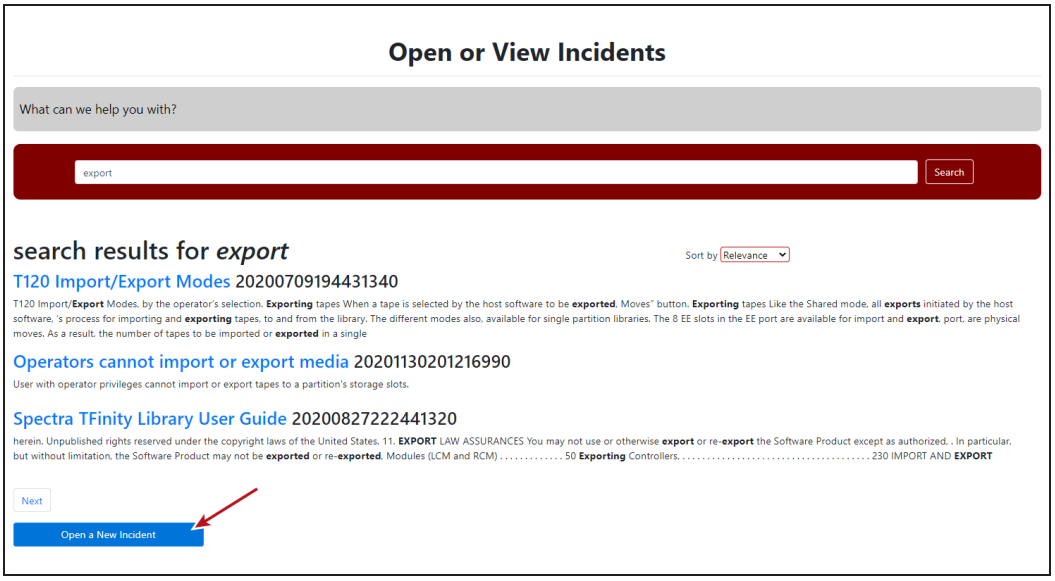

Figure 42 Click **Open a New Incident**.

v. Continue with Step 4 on page 43.

- Submit an Incident Directly

  i. From any page, select **Inventory>My Inventory**.

  ii. Locate the row of the product for which you want to submit an incident and click **Create Incident**.

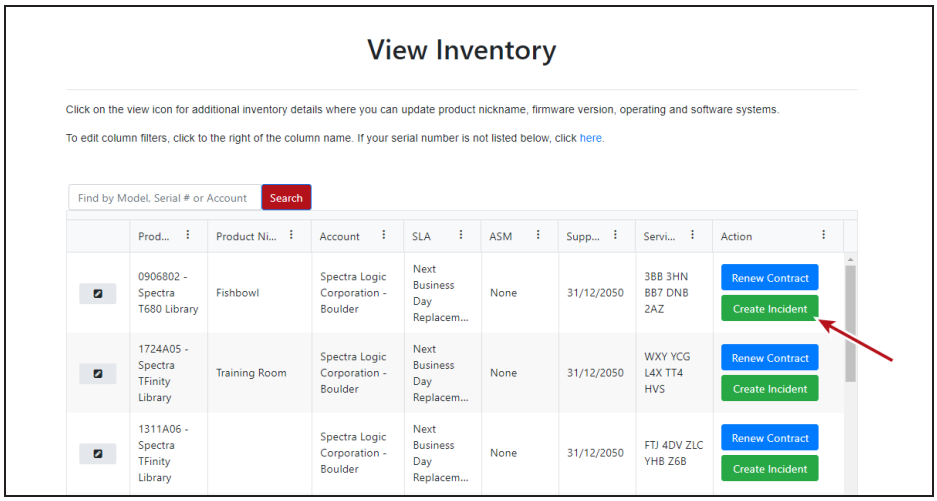

Figure 43 Click **Create Incident**.

  iii. Continue with Step 4 on page 43.

4. On the Create Incident page, enter the requested information providing as much detail as possible. When you are finished, click **Submit**.

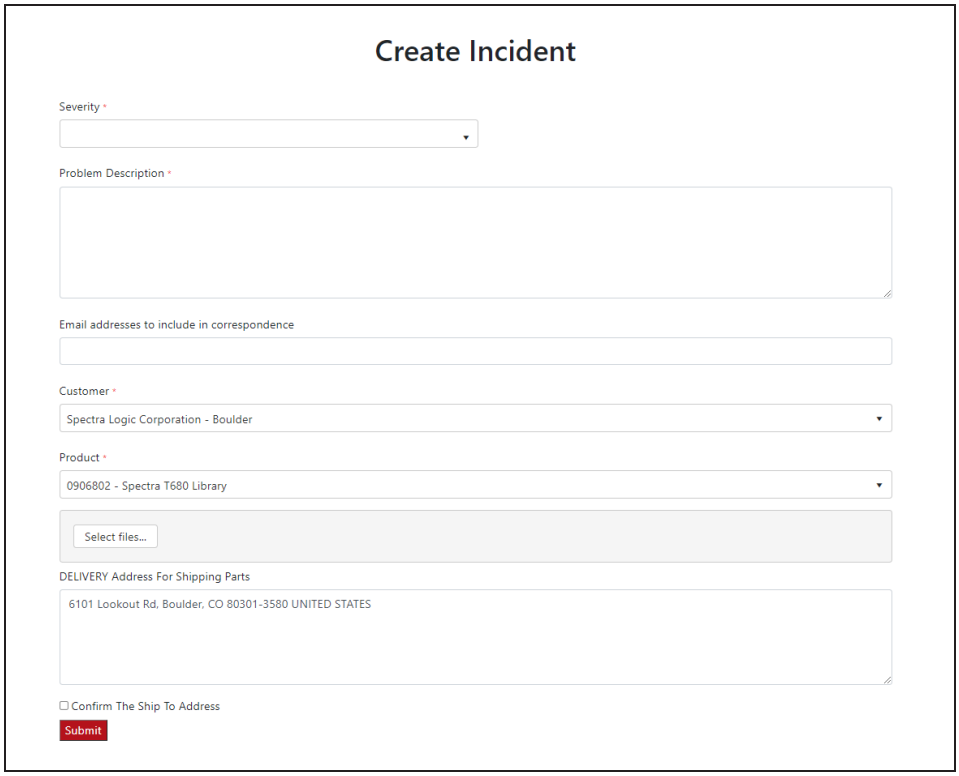

Figure 44 Enter information about your incident and click **Submit**.

USING THE EMBEDDED BLACKPEARL DASHBOARD

The embedded BlackPearl® dashboard allows you to quickly view the status of critical aspects of a BlackPearl system in the Vail sphere, and easily perform commonly used functions of the system.

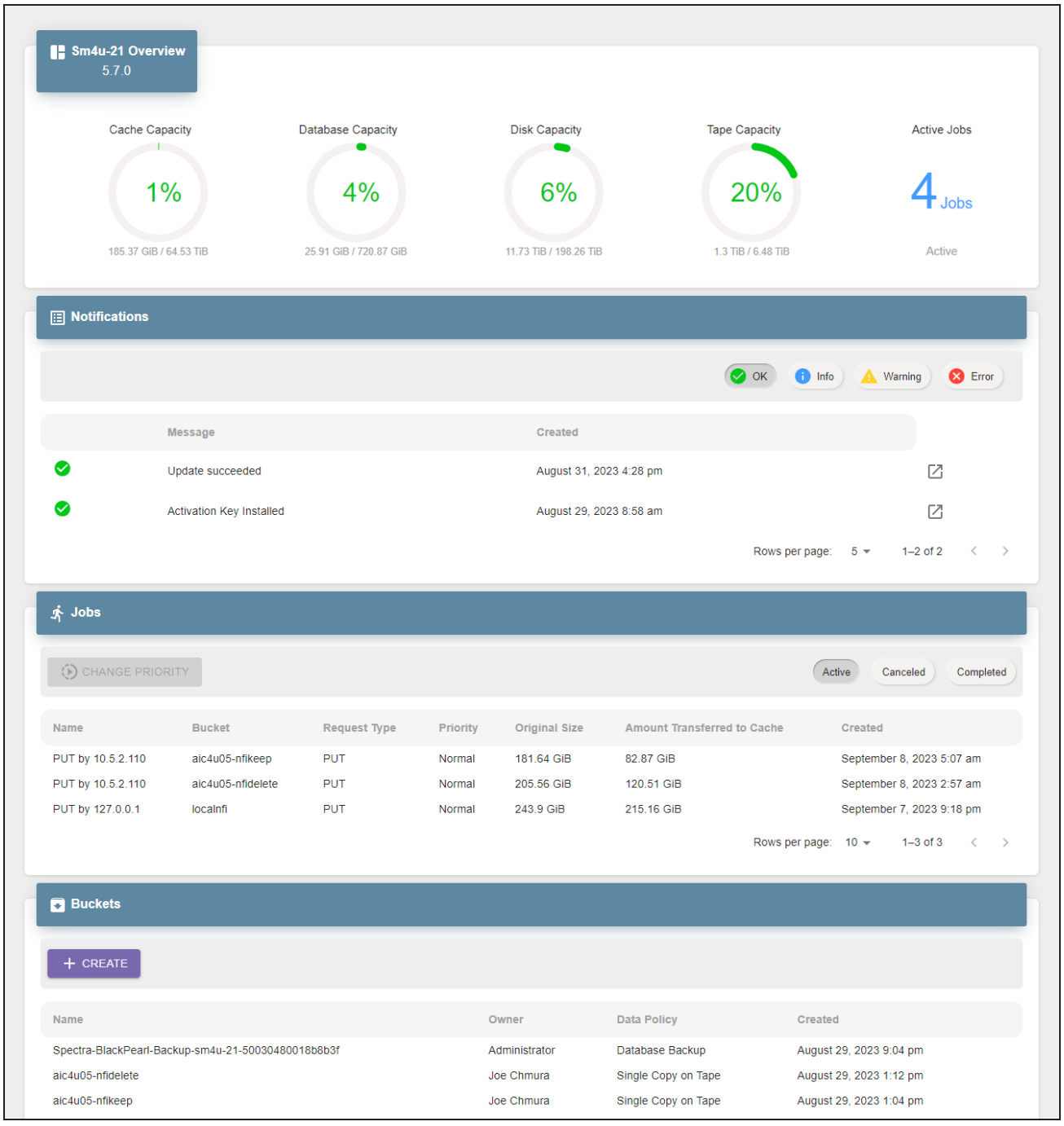

Figure 45 The Embedded Dashboard.

VIEW THE STATUS OF THE BLACKPEARL SYSTEM

Use the sections below to view the status of multiple aspects of the BlackPearl system.

View System Overview

The Overview pane provides a quick look at the most critical aspects of the BlackPearl system.

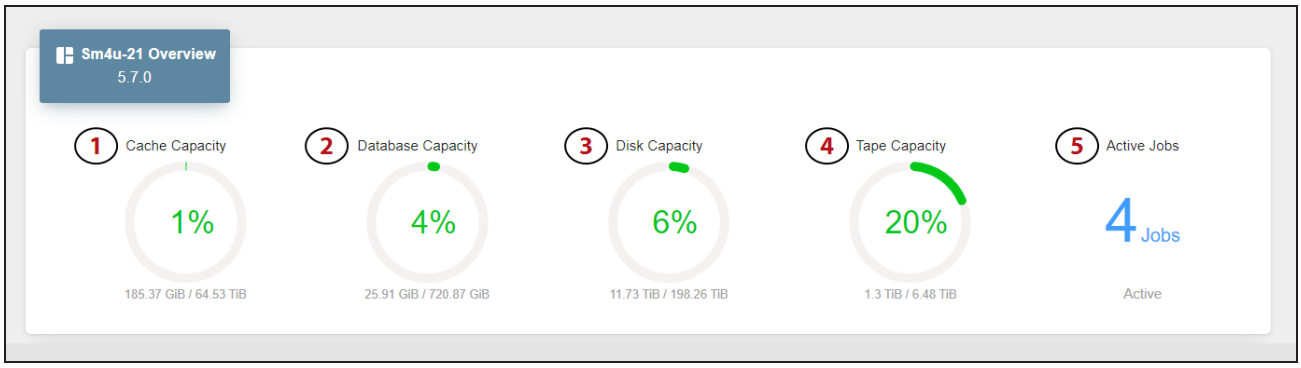

Figure 46 The Overview pane.

1. The BlackPearl system cache capacity and percentage of used cache space.
2. The capacity of the BlackPearl system database and percentage of used space.
3. The capacity of all disk-based storage connected to the BlackPearl system and percentage of used space.
4. The capacity of all tape-based storage in the tape library connected to the BlackPearl system and percentage of used space.
5. The number of active jobs running on the BlackPearl system.

Mouse-over the green section of any percentage graph to display the amount of used space, and over the gray section to display the amount of remaining space.

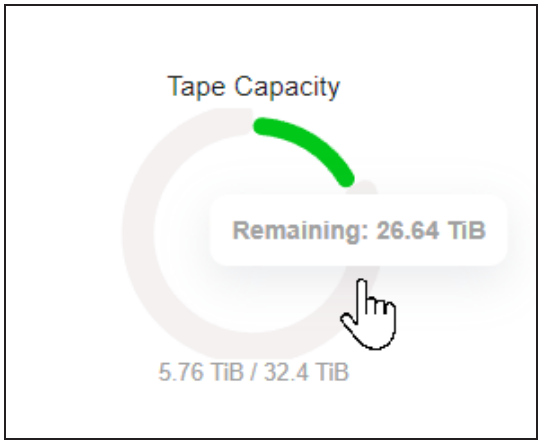

Figure 47 Mouse-over a graph to view specific details.

View Notifications

Notifications provide information about errors that occur on the system, caution messages that alert you to issues that may impact your workflow, and informational messages. Additionally, notifications may provide troubleshooting advice to help you resolve issues that may occur.

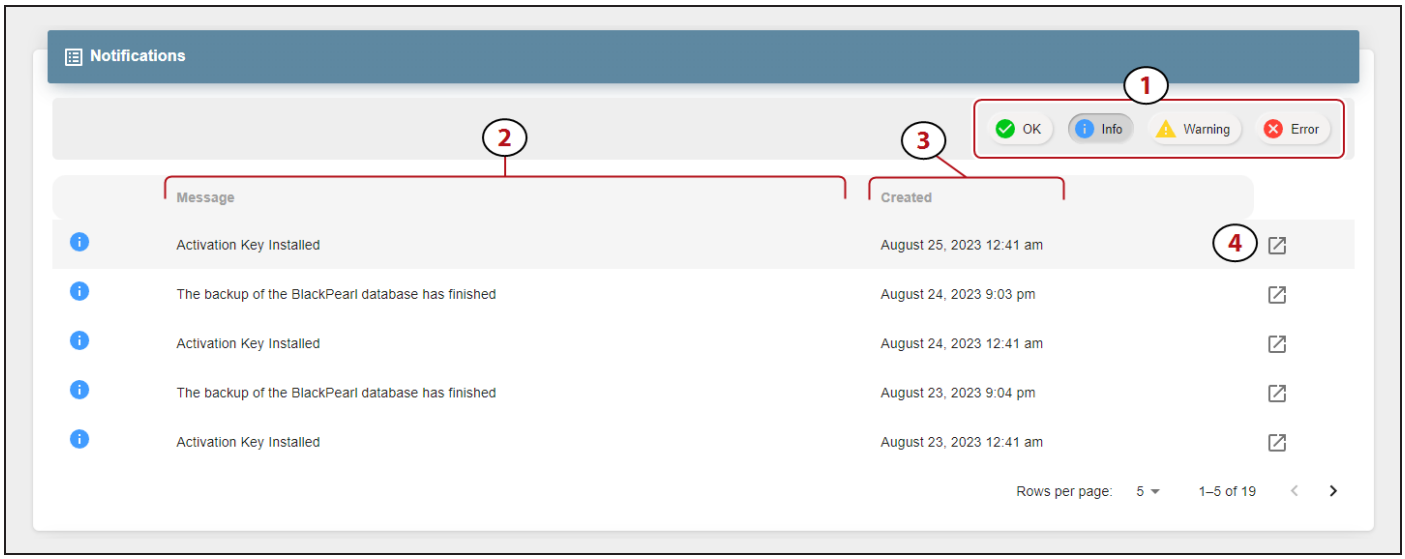

Figure 48 The Notifications pane.

1. Use the **Notification Type** buttons to switch between OK, Info, Warning, and Error messages.
2. Contains a brief description of the notification.
3. Displays the timestamp the notification was generated.
4. Click the **Details Button** to view additional message **Details** and **Troubleshooting Advice**.

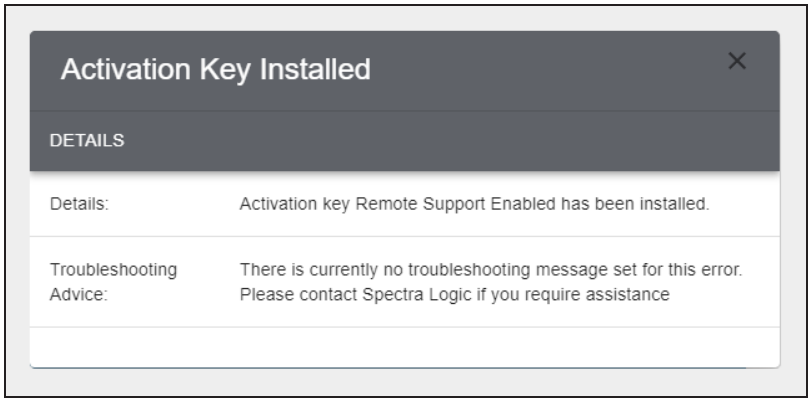

Figure 49 The Notification details dialog box.

View Jobs

The Jobs pane provides information on each Active, Canceled, or Completed job processed by the BlackPearl system.

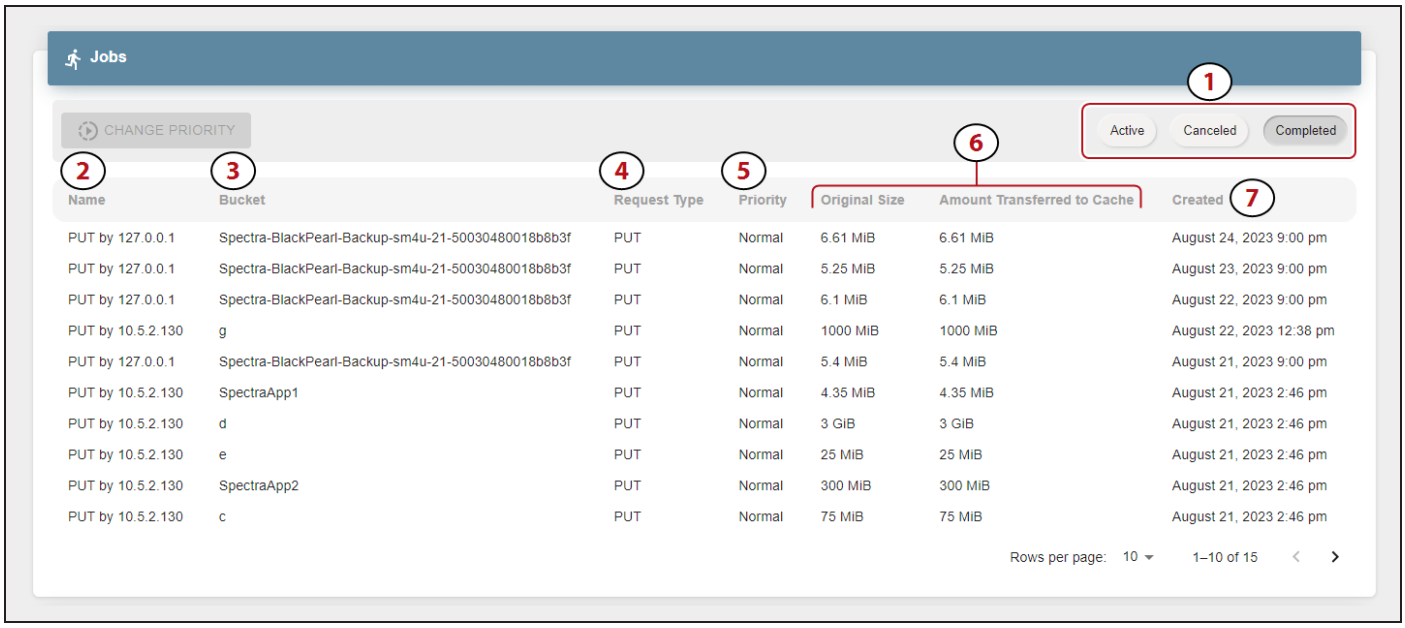

Figure 50 The Jobs pane.

1. Use the **Job Type** buttons to switch between Active, Canceled, and Completed jobs.
2. The name of the job includes the job type and the IP address of the job initiator.
3. The bucket used in the PUT or GET operation.
4. The type of job request.
5. The assigned priority of the job.
6. The original size and amount of data transferred to the BlackPearl system cache.
7. Displays the timestamp of when the job was initiated.

Use the **Change Priority** button to change the priority of an active job. See Change Job Priority on page 57 for more information.

View Buckets

The Buckets pane provides information about all buckets configured on the BlackPearl system.

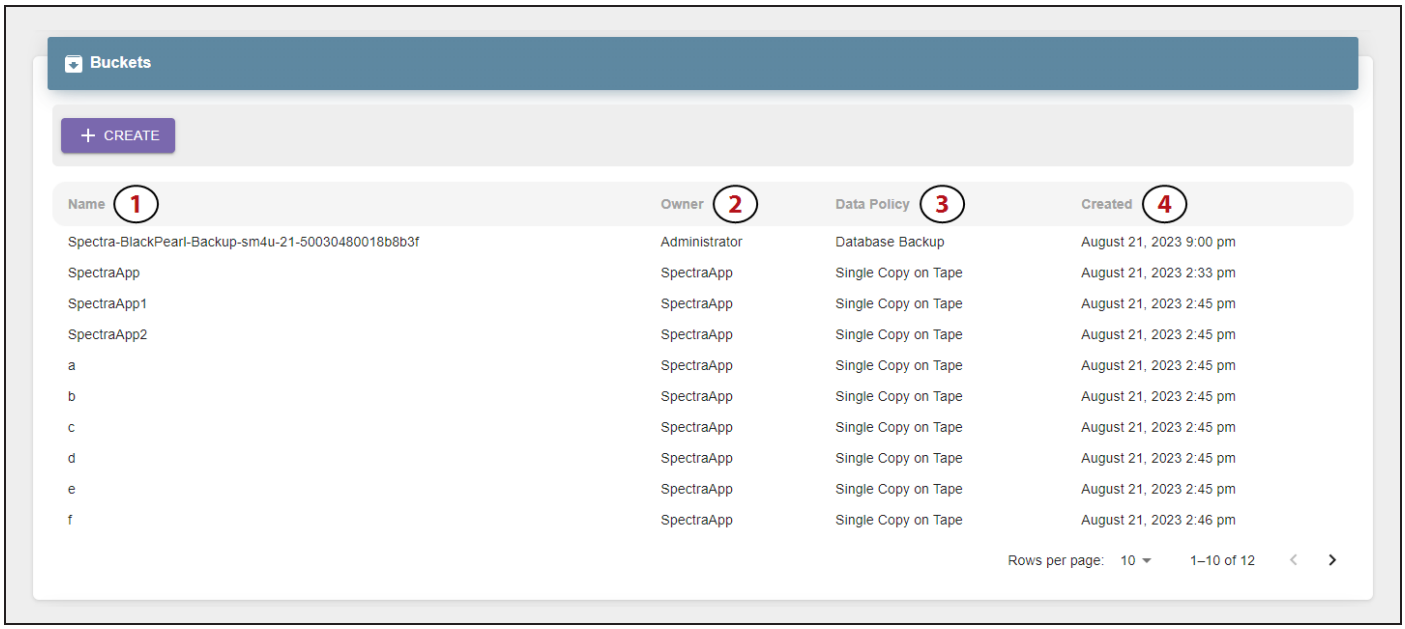

Figure 51 The Buckets pane.

1. Displays the name of the bucket.
2. The bucket owner configured on the BlackPearl system.
3. The data policy used by the bucket.
4. Displays the timestamp of when the bucket was created.

View Pools

The Pools pane displays information about all disk storage pools configured on the BlackPearl system including dedicated BlackPearl system cache and database pools.

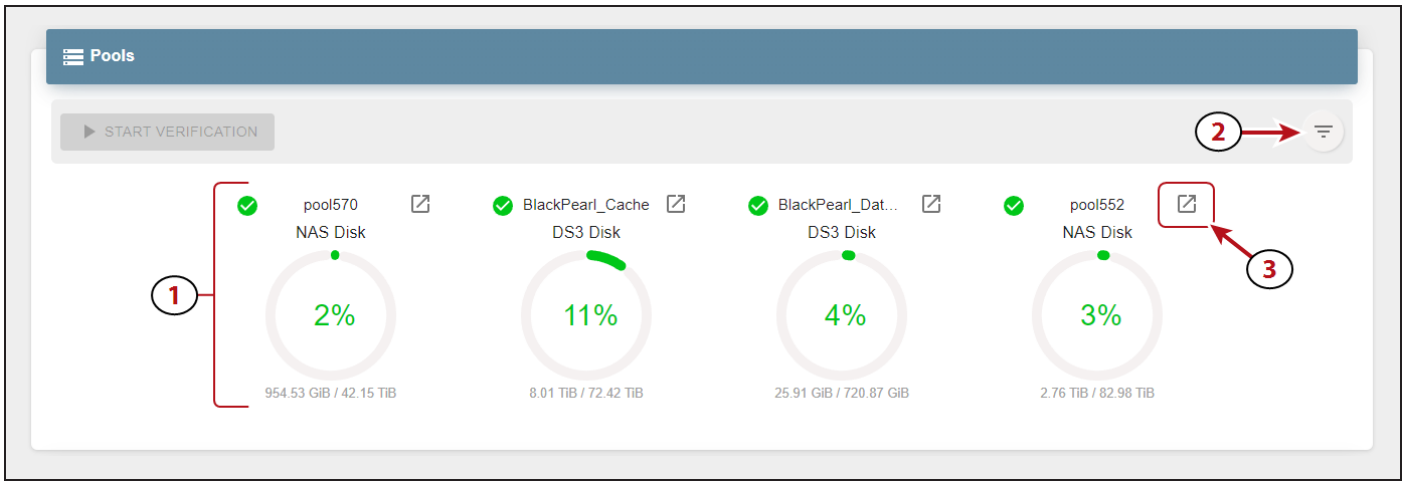

Figure 52 The Pools pane.

1. Each percentage graph displays both the used and remaining space for the associated pool.
2. Use the **Filter** button to select which pools to display on the Pools pane.
3. Click the **Details** button to view additional information about a specified pool.

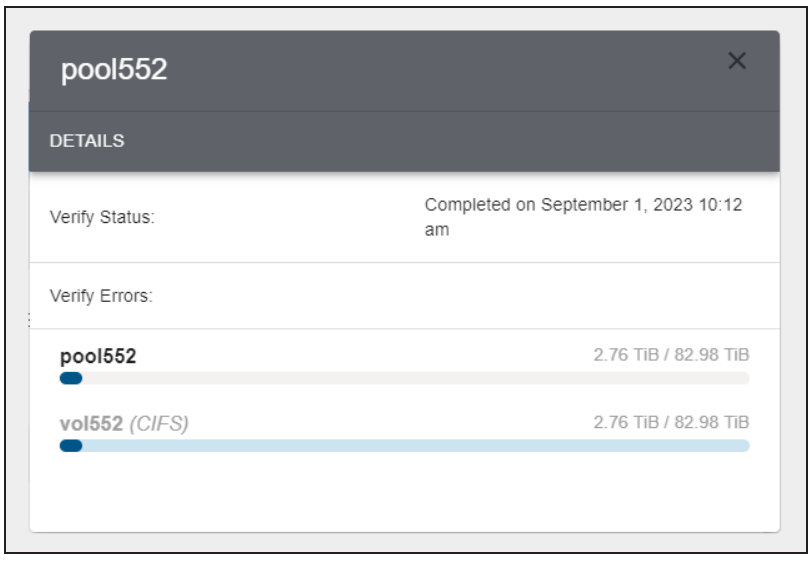

Figure 53 The pool details dialog box.

View Volumes

The Volumes pane displays information about all volumes configured on the BlackPearl system.

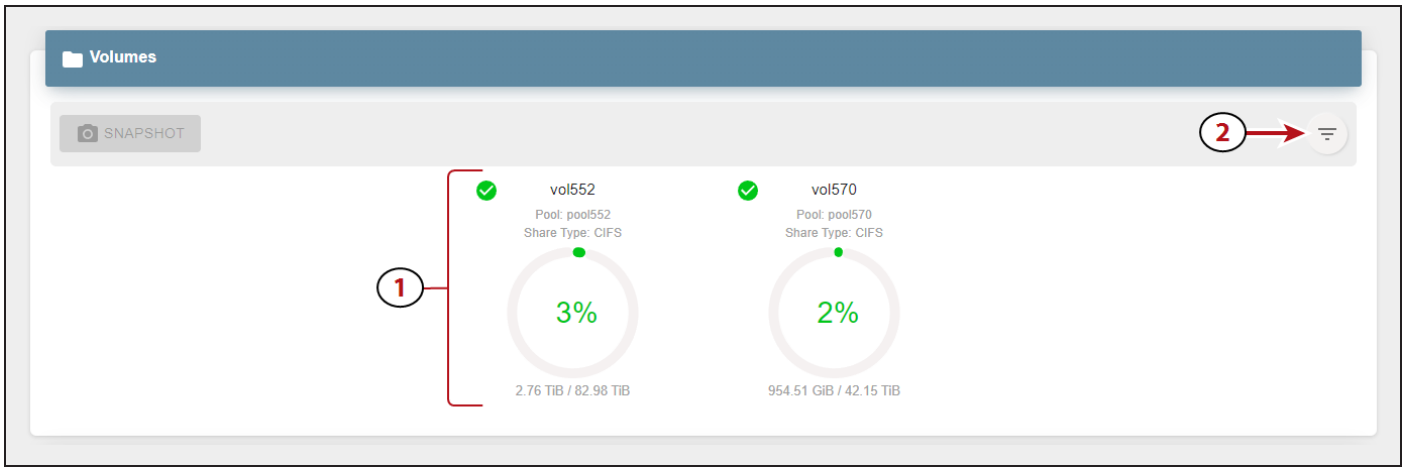

Figure 54 The Volumes pane.

1. Each percentage graph displays both the used and remaining space for the associated pool.
2. Use the **filter button** to select which pools to display on the Pools pane.

Use the **Snapshot** button to create a snapshot. For more information see Create a Volume Snapshot on page 55.

View Tape Partitions - Main View

The Tape Partitions pane displays information about the tape partitions configured on the tape library attached to the BlackPearl system. The Tape Partitions pane features both a main view and a tape cartridge state view.

To display the main view, manipulate the slider (**2**) to the left position.

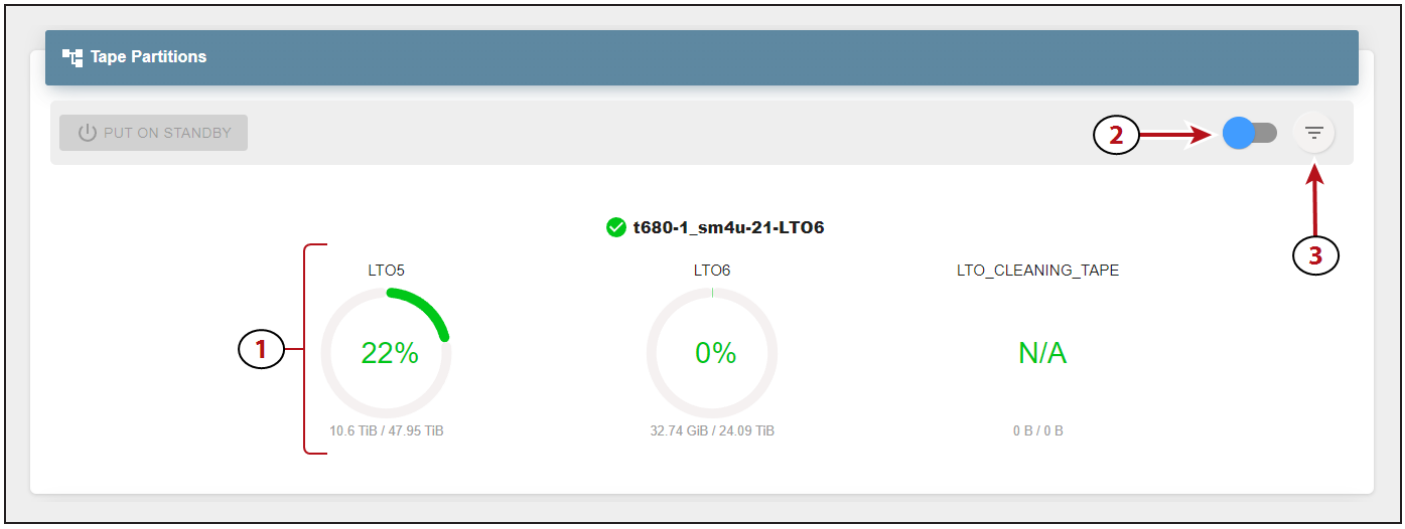

Figure 55 The Tape Partitions pane - main view.

1. Each percentage graph displays both the used and remaining space for the associated type and generation of media present in the tape partition. Mouse-over the green section of any percentage graph to display the amount of used space, and over the gray section to display the amount of remaining space.
2. Use the slider to change the display a graph of the current state of each tape cartridge present in the partition.
3. Use the **Filter** button to select which pools to display on the Tape Partitions pane.

View Tape Partitions - Tape State View

The Tape Partitions pane displays information about the tape partitions configured on the tape library attached to the BlackPearl system. The Tape Partitions pane features both a main view and a tape cartridge state view.

To display the tape cartridge state view, manipulate the slider (**2**) to the right position.

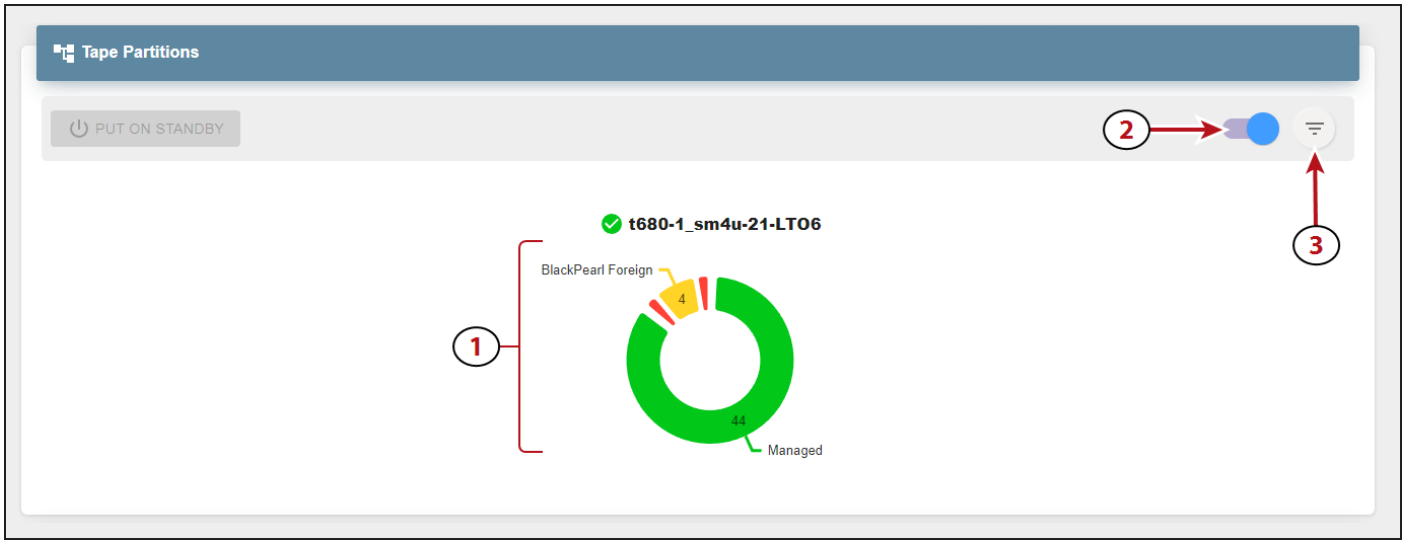

Figure 56 The Tape Partitions pane - main view.

1. The state of all tape cartridges in the partition. Each state combines different generations of tape media if present. Mouse-over any part of the graph to display more detailed information.
2. Use the slider to change the display a graph of the current state of each tape cartridge present in the partition.
3. Use the **Filter** button to select which pools to display on the Tape Partitions pane.

View Tape Drives

The Tape Drives pane displays information about all tape drives installed in the tape library connected to the BlackPearl system.

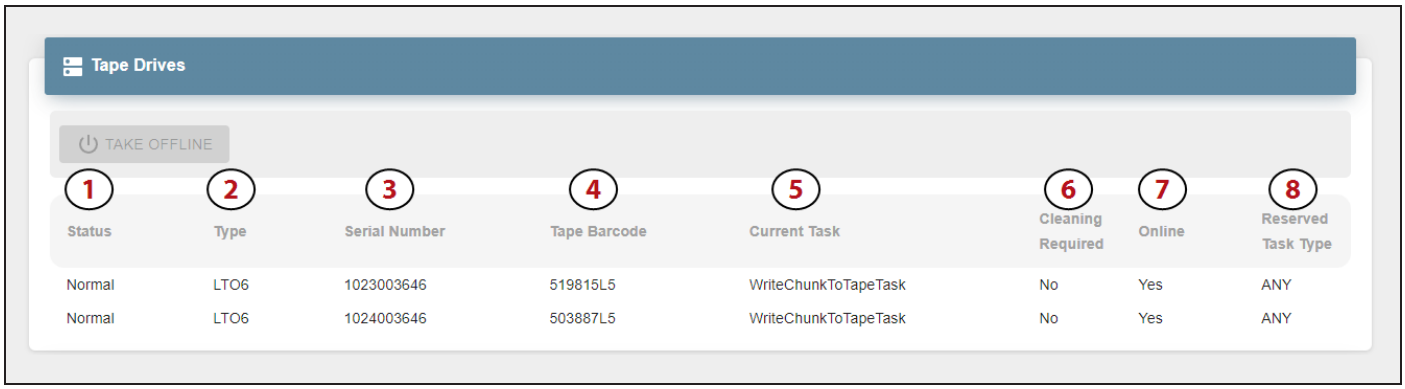

Figure 57 The Tape Drives pane.

1. The current status of the tape drive.
2. The drive type and generation.
3. The drive serial number as assigned by the tape library.
4. The physical barcode of the tape cartridge loaded into the tape drive. This field is blank when no tape is loaded.
5. The current task being performed by the drive. This field is blank when no task is in progress.
6. Indicates if the tape drive requires cleaning.
7. Indicates if the tape drive is online or offline.
8. The reserved task type, if configured. The default setting is Any.

View Tape Management

The Tape Management pane displays the status of all managed tapes in the tape library connected to the BlackPearl gateway.

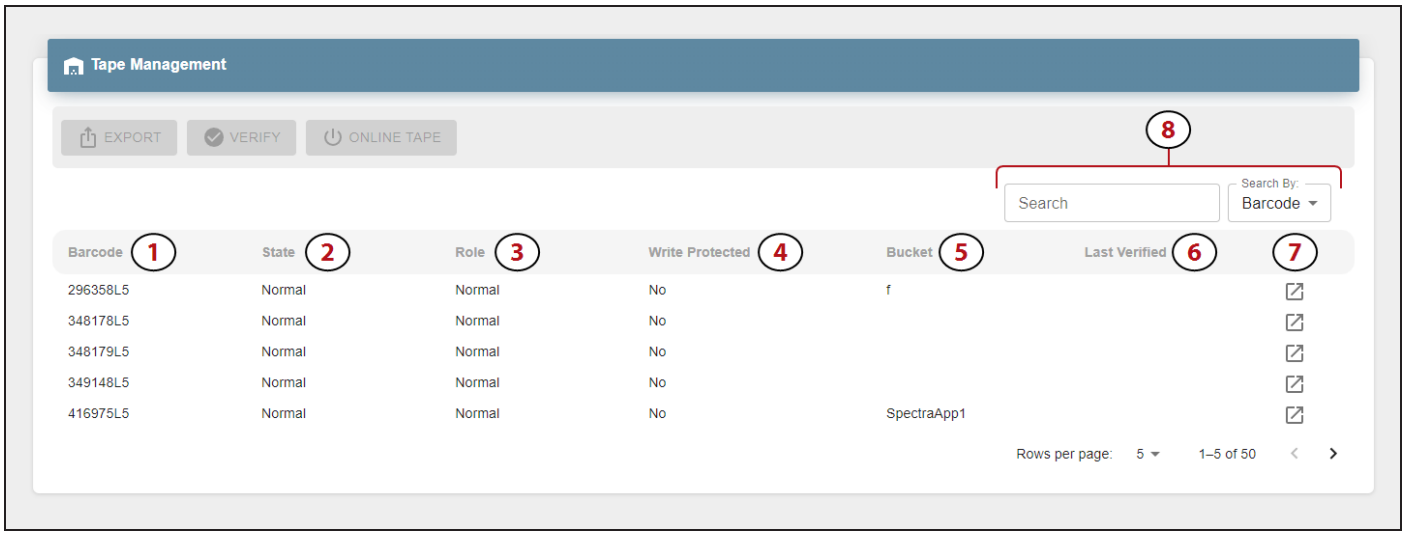

Figure 58 The Tape Management pane.

1. The physical barcode label on the tape cartridge.
2. The current state of the tape cartridge.
3. Indicates if the tape is configured for use as a **Normal** or **Test** tape.
4. The physical **Write Protected** status of the tape cartridge.
5. The name of any BlackPearl system bucket(s) present on the tape cartridge.
6. Displays the timestamp of the last tape verification.
7. Click the **Details** button to display additional information about the selected tape cartridge.
8. Use the **Search** entry field and **Search By** drop-down menu to find a specific tape cartridge.

See one of the following sections for instructions to export, verify, or online a tape cartridge:

- Export a Tape Cartridge on the next page
- Verify a Tape Cartridge on page 56
- Online a Tape Cartridge on page 56

DASHBOARD ACTIONS

In addition to displaying information about the BlackPearl system, the embedded dashboard allows you to perform the most frequently-used actions as described in the sections below.

Create a Volume Snapshot

A volume snapshot is an image of a volume's configuration and data makeup as they were when the snapshot was generated. Restoring to a previously created snapshot allows you to go "back in time" and restore the volume to the state it was in when the snapshot was created.

Here is how to create a volume snapshot:

1. In the BlackPearl dashboard, navigate to the **Volumes** pane.
2. **Select** the volume for which you want to create a snapshot.
3. Click **Snapshot**.
4. If desired, edit the pre-generated **Snapshot** name.

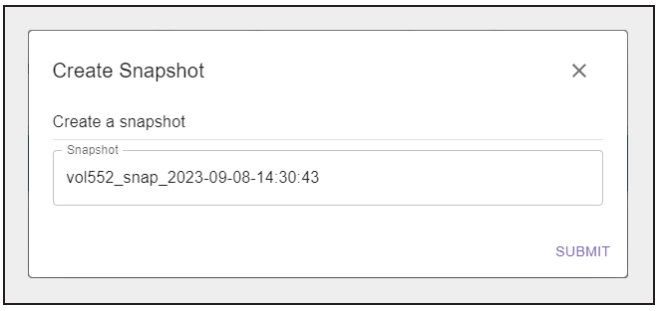

Figure 59 The Export Tape dialog box.

5. Click **Submit**.

Export a Tape Cartridge

Exporting a tape cartridge prepares it for physical removal from the attached tape library. In a Spectra Logic tape library, the cartridge is moved from the storage pool to the Entry/Exit pool, before it is physically exported from the library at the library front panel.

1. In the BlackPearl system dashboard, navigate to the **Tape Management** pane.
2. **Select** the tape you want to export.
3. Click **Export**.

4. If desired, edit the **Export Label** and **Export Location**.

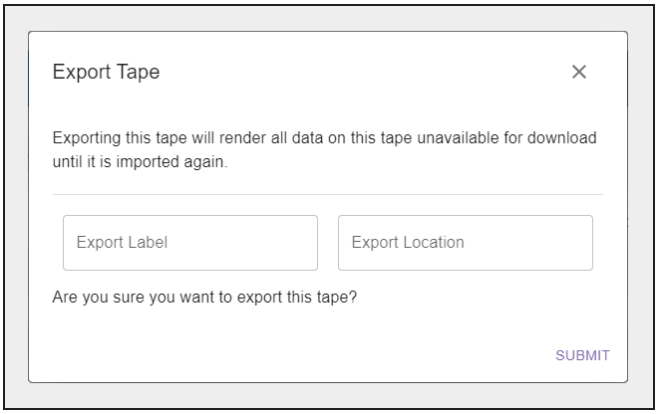

Figure 60 The Export Tape dialog box.

5. Click **Submit**.

Online a Tape Cartridge

Setting a tape cartridge to "online" prepares the cartridge for use by the BlackPearl system. This allows the system to use the tape cartridge for data storage operations.

Here is how to online a tape cartridge:

1. In the BlackPearl system dashboard, navigate to **Tape Management**.
2. Select a tape in the **Offline** state.
3. Click **Online Tape**.
4. Click **Submit**.

Verify a Tape Cartridge

The BlackPearl system can perform a data integrity verification of all data on a selected tape cartridge to confirm it is still viable. While the verification is in progress, client access has priority over the data integrity scan.

Here is how to verify a tape cartridge:

1. In the BlackPearl system dashboard, navigate to **Tape Management**.
2. **Select** the tape you want to verify.
3. Click **Verify Tape**.
4. Click **Submit**.

Change Job Priority

If desired, you can change the priority of an active job on the BlackPearl system.

Here is how you change the priority of a job:

1. In the BlackPearl system dashboard, navigate to the **Jobs** pane.
2. If necessary, click **Active** to display the list of active jobs.
3. **Select** the job for which you want to change priority.
4. Use the **drop-down** menu to select a new priority for the job.
5. Click **Submit**.