Exercise 6: Managing NAS Storage VMs

In this exercise, you use best practice tools to manage storage VMs (storage virtual machines, also known as SVMs) that have NAS protocols enabled.

Objectives

This exercise focuses on enabling you to do the following:

- Migrate and rehome a NAS data LIF
- Manage volume tiering policies

Case Study

The NetApp cluster node needs to be brought down so that a new expansion controller board can be installed. To avoid disturbing the NAS clients that are actively using the system, you can move the logical network interface through which the clients access the system to a different node in the cluster. Temporarily migrate the LIF to another network port, or rehome the LIF if the move is permanent.

Modify the Fabric Pool volume tiering policy so that user data is moved from the performance tier to the cloud tier without waiting for the user data to cool first.

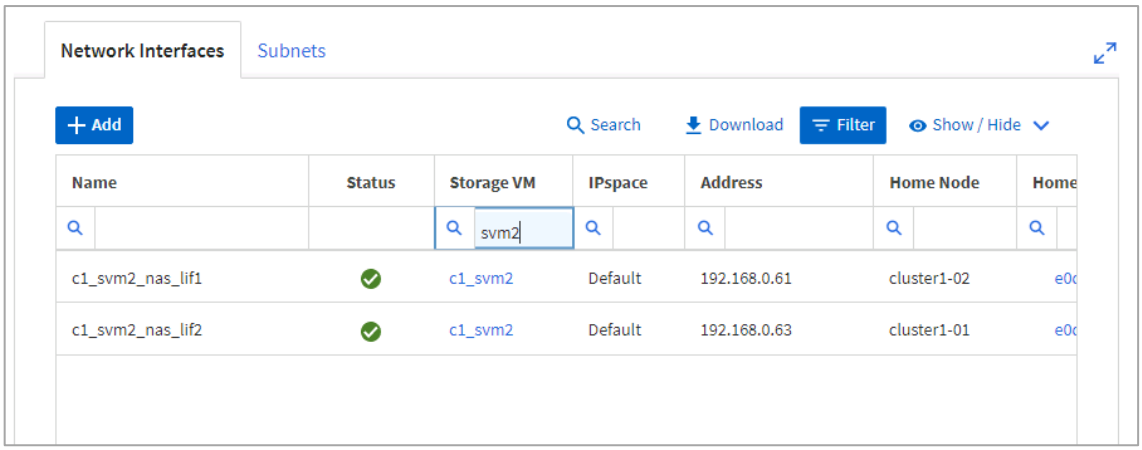
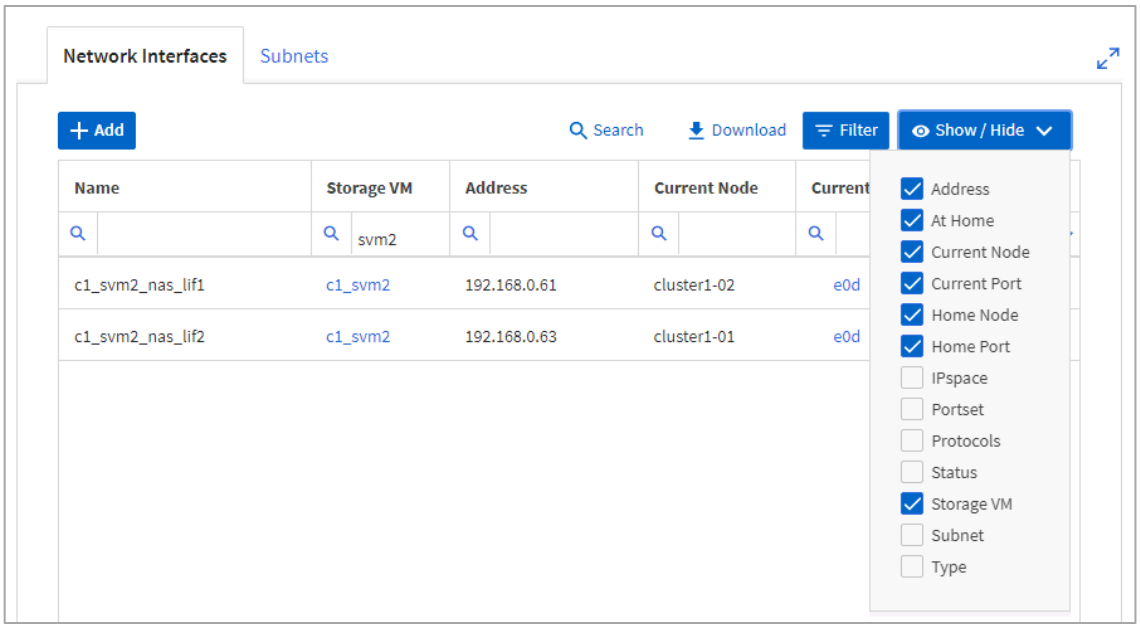
Lab Equipment

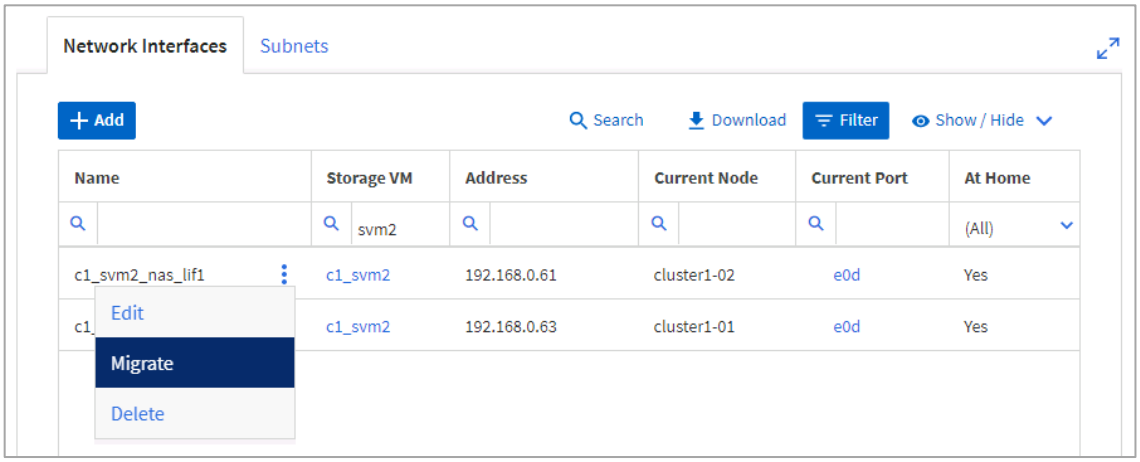
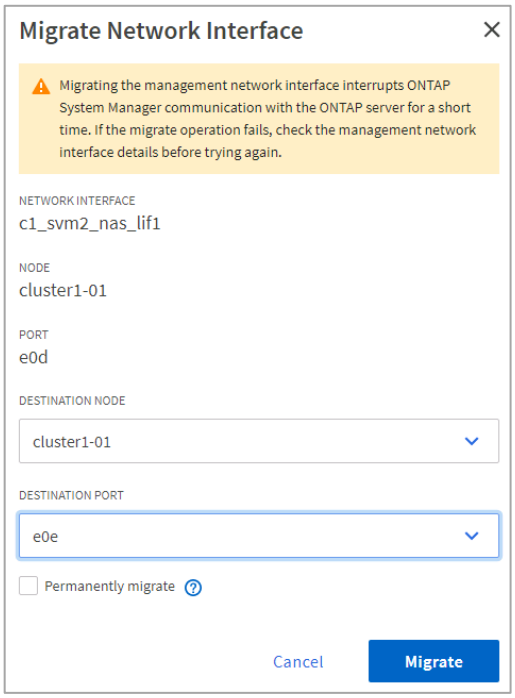
Use the following equipment to complete the exercise:

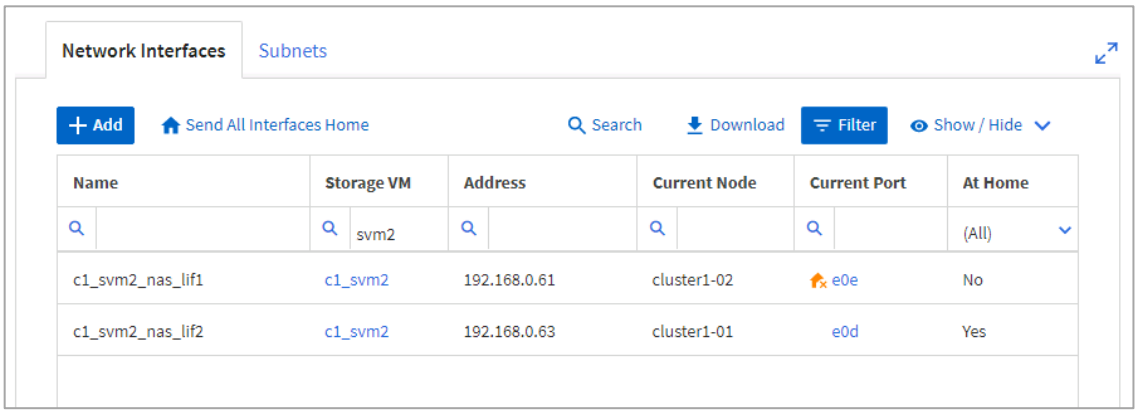
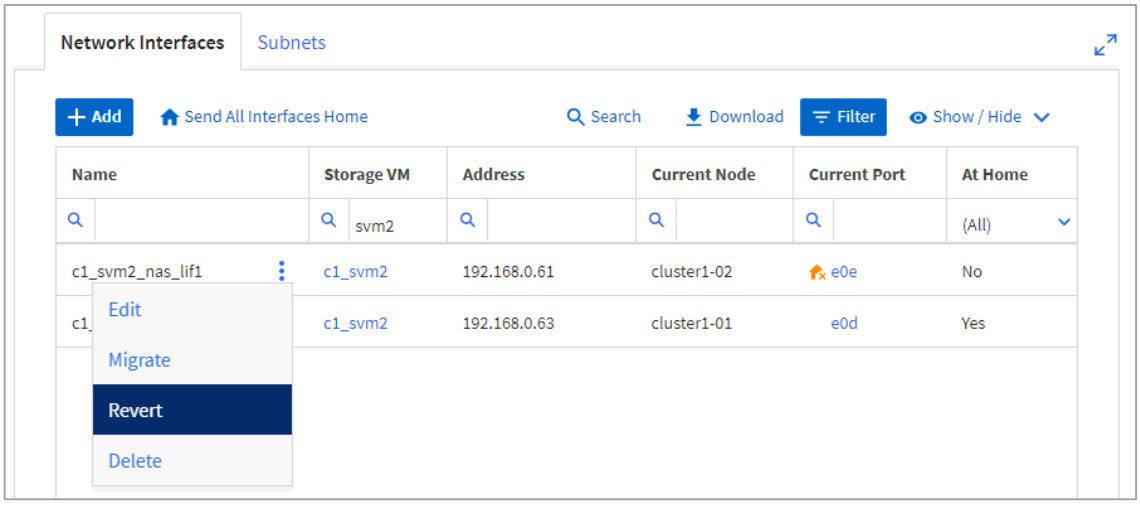
System	Host Name	IP Addresses	User Name	Password
Windows Server	jumphost	192.168.0.5	DEMO\Administrator	Netapp1!
ONTAP cluster-management LIF (cluster1)	cluster1	192.168.0.101	admin (case sensitive)	Netapp1!
ONTAP cluster-management LIF (cluster2)	cluster2	192.168.0.102	admin (case sensitive)	Netapp1!

Task 1: Migrate and Rehome a NAS Data LIF

Step	Action
1-1	Log in to NetApp ONTAP System Manager for **cluster1**.
1-2	From the System Manager Dashboard menu, select **Network > Overview**.

Step	Action
1-3	In the Network Interfaces pane, use the Filter function to display only network interfaces that belong to c1_svm2. 
1-4	Use the Show / Hide menu to include the **Current Node**, **Current Port**, and **At Home** columns in the display. 

Step	Action
1-5	Position your cursor over **c1_svm2 _nas_lif1**, then from the More menu, select **Migrate**. 
1-6	Note the current port at the top of the Migrate Network Interface dialog box.
1-7	In the Migrate Network Interface dialog box, specify the following settings: • Destination Node: **cluster1-01** • Destination Port: **e0e** 
1-8	If you select the Permanently migrate checkbox, you rehome the LIF on the destination port. For now, leave the Permanently migrate checkbox not selected.
1-9	Click **Migrate**.

Step	Action
1-10	Verify that the LIF is now hosted on port e0e of node cluster1-01. 
1-11	The warning icon indicates that the LIF is not running on its home port.
1-12	From the c1_svm2_nas_lif1 More menu, select **Revert**. 
1-13	Click **Revert** to confirm the movement of the LIF, which is again hosted on its home port.
1-14	Start a PuTTY session with cluster1.

1-15	Verify the current location of the data LIFs:
	`network interface show -vserver c1_svm2`
	Sample output:
	`cluster1::> network interface show -vserver c1_svm2`
	`Logical Status Network Current Current Is`
	`Vserver Interface Admin/Oper Address/Mask Node Port Home`
	`c1_svm2`
	`c1_svm2_nas_lif1 up/up 192.168.0.61/24 cluster1-02 e0d true`
	`c1_svm2_nas_lif2 up/up 192.168.0.63/24 cluster1-01 e0d true`
	`2 entries were displayed.`

Step	Action
1-16	Reassign the home port of c1_svm2_nas_lif1 to port e0f, and leave the home node as cluster1-01: **`network interface modify -vserver c1_svm2 -lif c1_svm2_nas_lif1 -home-port e0f`**

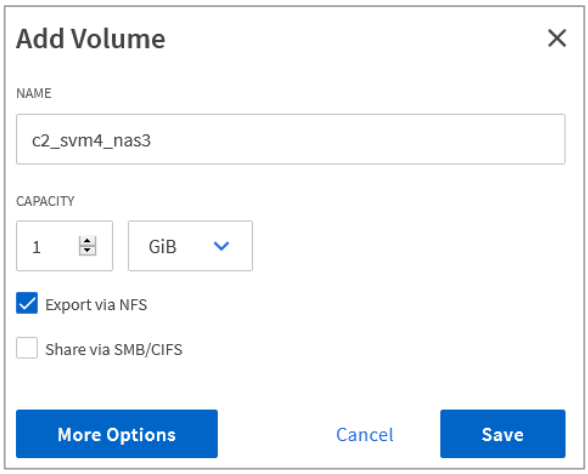
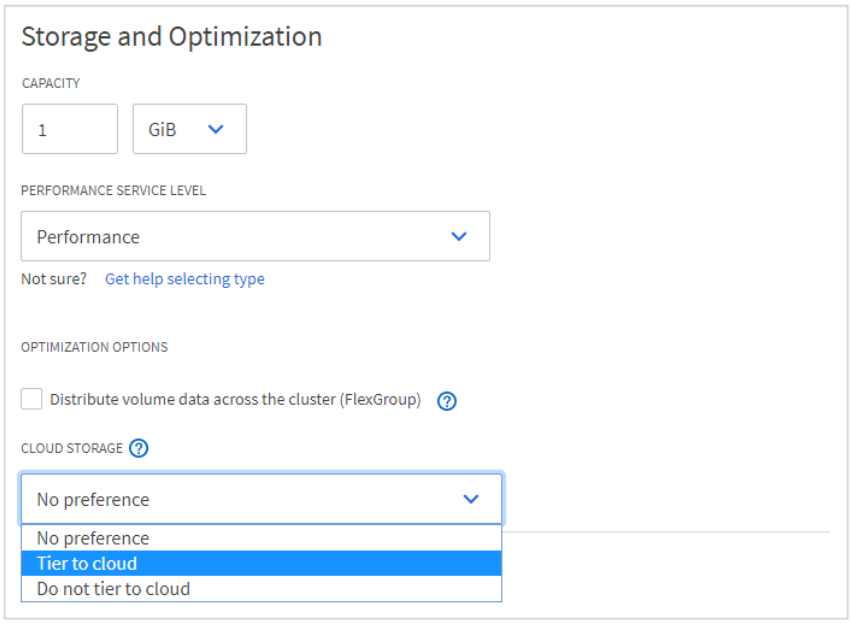
1-17	Review the home port again:
	`network interface show -vserver c1_svm2`
	Sample output:
	`cluster1::> net int show -vserver c1_svm2`
	`            Logical    Status     Network            Current       Current Is`
	`Vserver     Interface  Admin/Oper Address/Mask       Node          Port    Home`
	`----------- ---------- ---------- ------------------ ------------- ------- ----`
	`c1_svm2`
	`            c1_svm2_nas_lif1 up/up 192.168.0.61/24   cluster1-02   e0d     false`
	`            c1_svm2_nas_lif2 up/up 192.168.0.63/24   cluster1-01   e0d     true`
	`2 entries were displayed.`

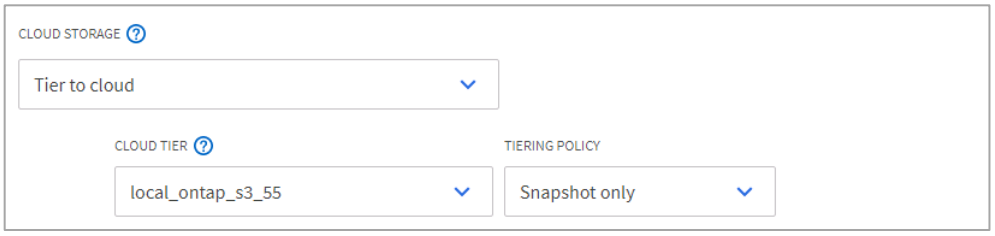
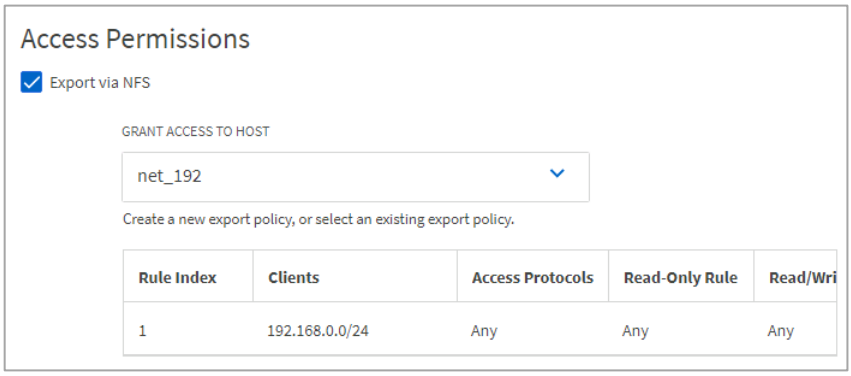
1-18	Answer the following questions: • Did the LIF move? _____ • What is the status of the LIF home? _____
1-19	Issue a `revert` command, which sends the LIF to its new home port: **`network interface revert *`**
1-20	The asterisk (*) wildcard is a positional parameter that represents the LIF name. The `revert` command reverts all LIFs that are not on their home ports.

1-21	Review the status of the LIFs again:
	`network interface show -vserver c1_svm2`
	Sample output:
	`cluster1::> net int show -vserver c1_svm2`
	`            Logical    Status     Network            Current       Current Is`
	`Vserver     Interface  Admin/Oper Address/Mask       Node          Port    Home`
	`----------- ---------- ---------- ------------------ ------------- ------- ----`
	`c1_svm2`
	`            c1_svm2_nas_lif1 up/up 192.168.0.61/24   cluster1-02   e0f     true`
	`            c1_svm2_nas_lif2 up/up 192.168.0.63/24   cluster1-01   e0d     true`
	`2 entries were displayed.`

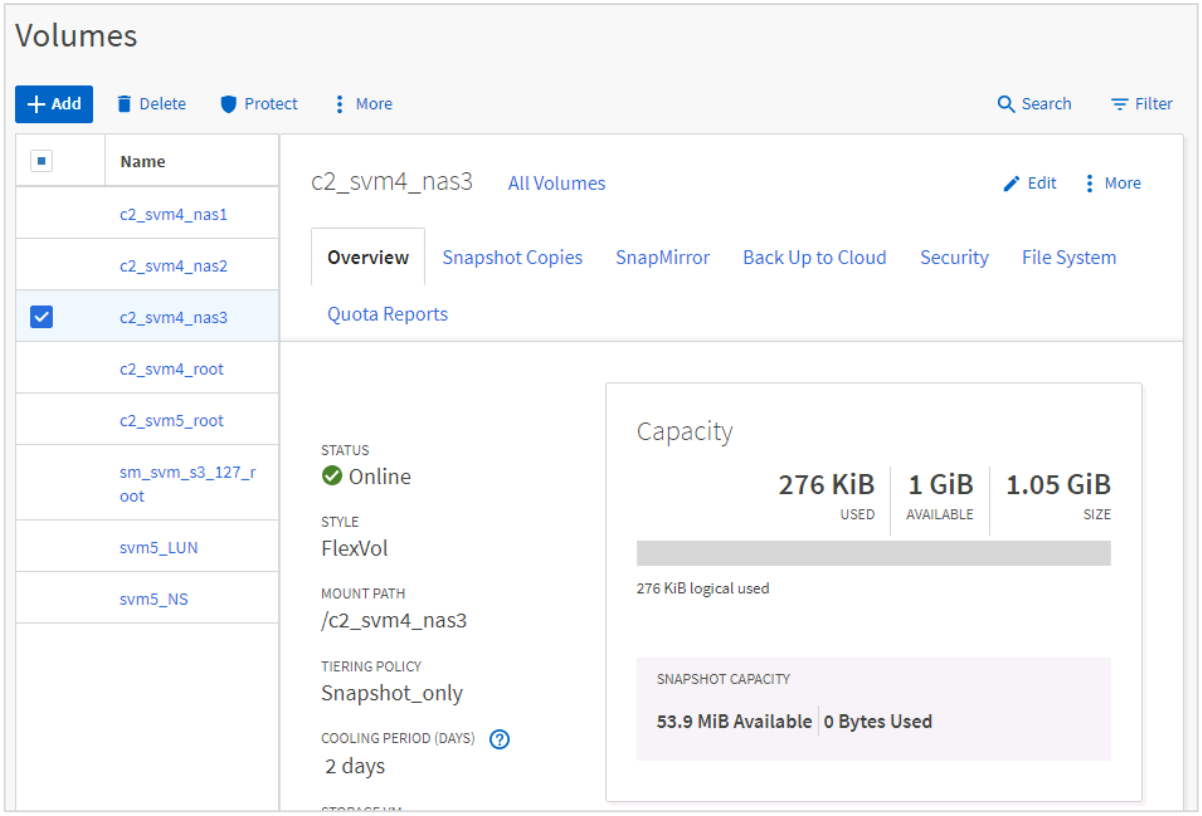
Task 2: Manage Volume Tiering Policies

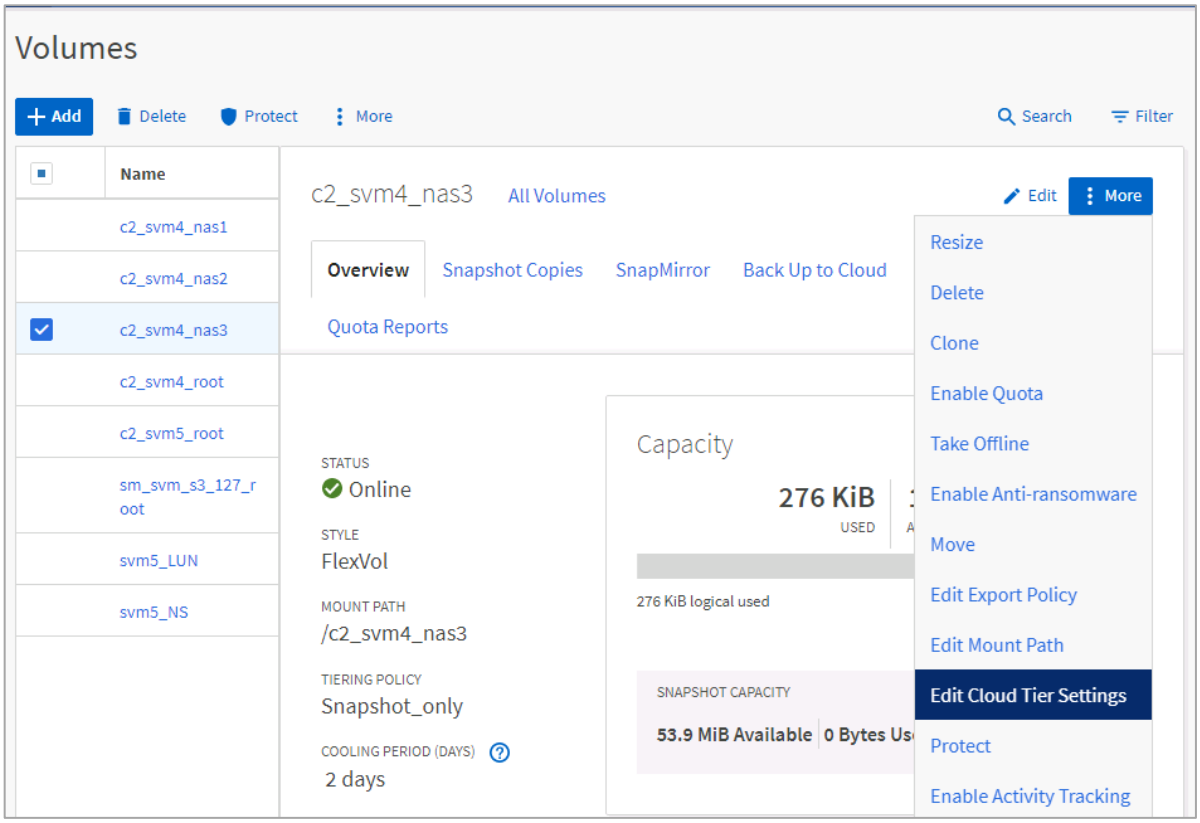
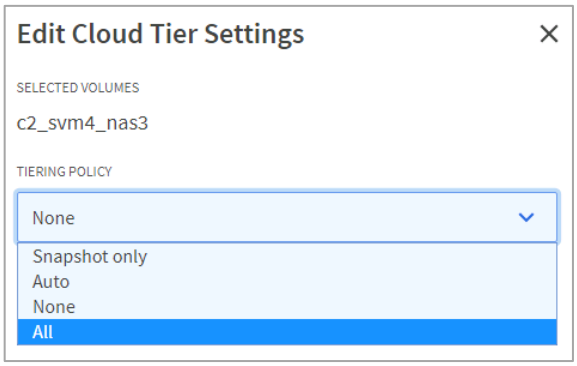
Step	Action
2-1	Log in to System Manager for **cluster2**.
2-2	From the System Manager Dashboard menu, select **Storage > Volumes**.
2-3	Click **Add**.

Step	Action
2-4	In the Add Volume dialog box, specify the following settings: • Name: **c2_svm4_nas3** • Capacity: **1 GiB** • Export via NFS: **<selected>** (default) • Share via SMB/CIFS: **<unselected>** 
2-5	Click **More Options**.
2-6	Scroll to the Storage and Optimization section, and then from the Cloud Storage menu, select **Tier to cloud**. 

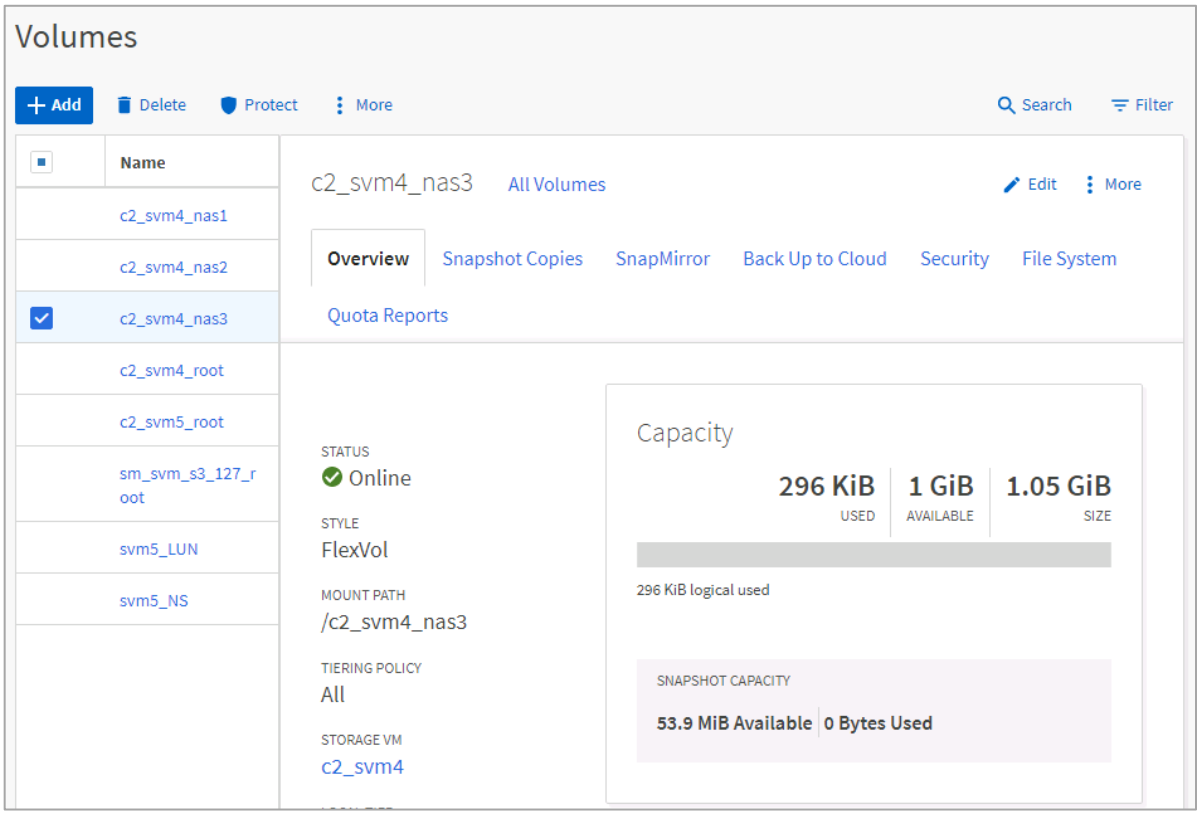
Step	Action
2-7	Observe the default cloud tier name and volume tiering policy. 
2-8	Scroll to the Access Permissions section, and then specify the following settings: • Export via NFS: **<selected>** (default) • Grant Access to Host: **net_192** 
2-9	Click **Save**.
2-10	On the Volumes page, click **c2_svm4_nas3**.

Step	Action
2-11	On the volume Overview tab, observe the local tier in which the volume is placed and the assigned tiering policy.



Step	Action
2-12	Click **More**, and then select **Edit Cloud Tier Settings**. 
2-13	In the Edit Cloud Tiering Setting window, from the Tiering Policy menu, select **All**. 
2-14	Click **Save**.

Step	Action
2-15	Verify that the tiering policy is set to All so that the ONTAP software does not wait for user data blocks to cool in the FabricPool performance tier before moving them to the FabricPool cloud tier.



End of exercise